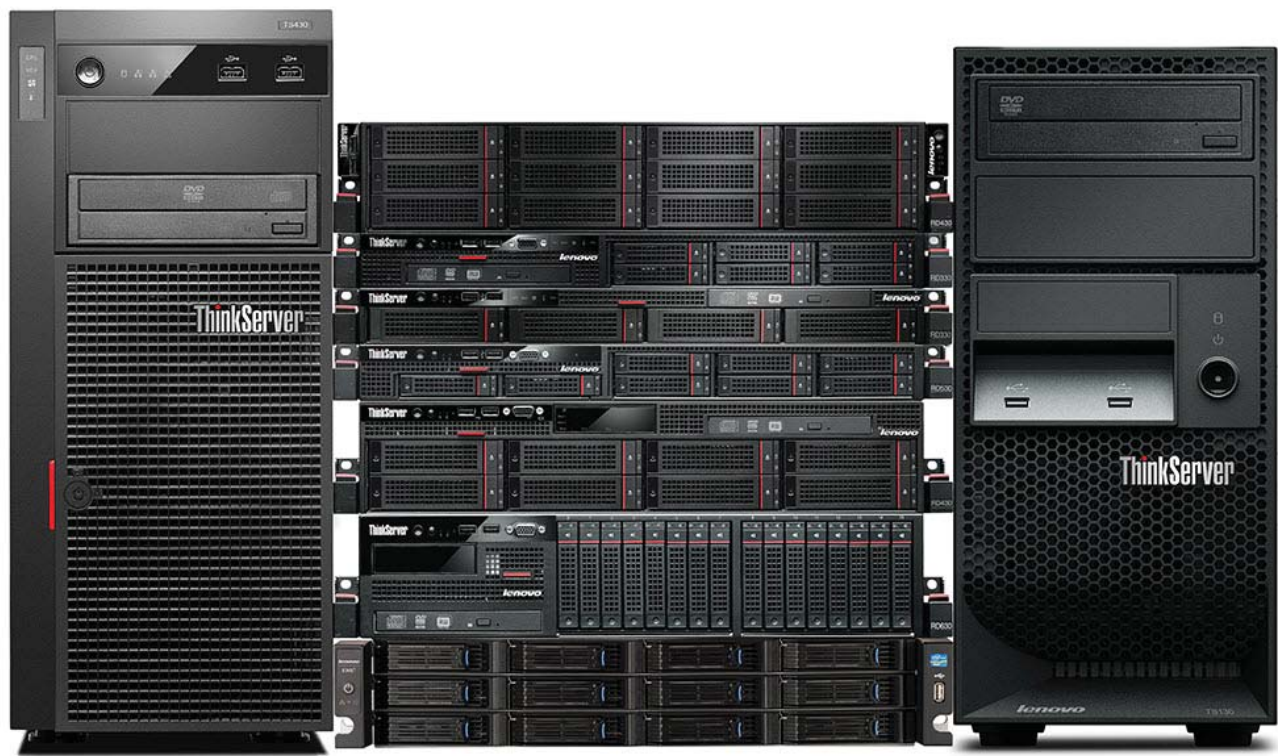




Product Specifications Reference

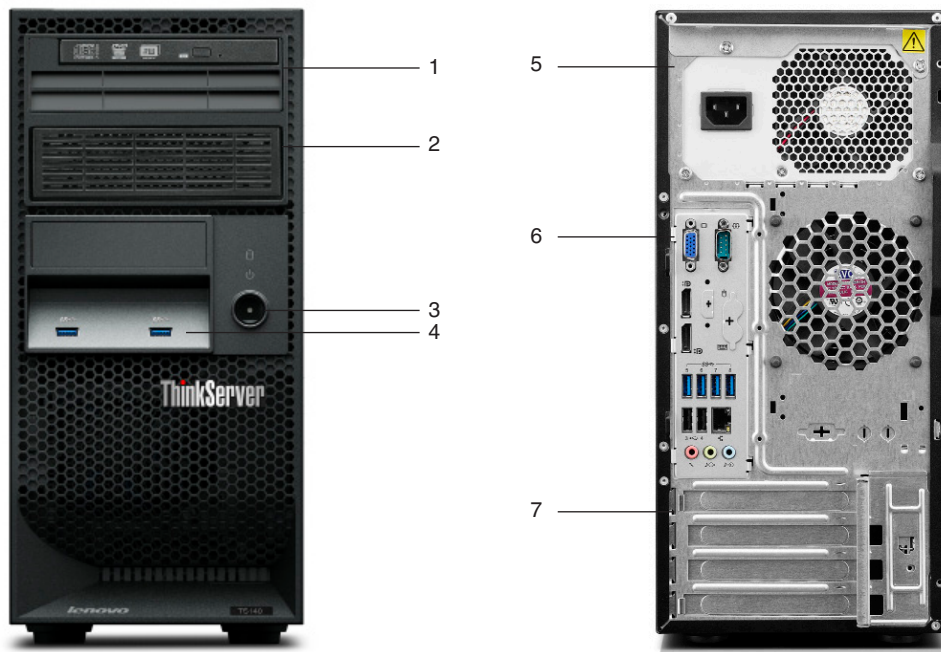
Lenovo® ThinkServer® Servers

January 2014 - Version 449



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ThinkServer TS140 - Overview



Front view

1. Optional slim optical + 3.5" drive bay in standard 5.25" bay
2. Optional 3.5" hard drive bay
3. Power Button
4. Front I/O: 2 USB 3.0 (blue)

Rear view

5. Power Supply:
280 watts 80 PLUS Bronze/450 watts 80 PLUS Platinum
6. Rear I/O: 2 USB 2.0
4 USB 3.0 (blue)
1 serial (9-pin)
1 RJ-45 (GbE)
1 line-in
1 line-out
1 microphone-in
2 DisplayPort (for Intel HD Graphics)
1 VGA (for Intel HD Graphics)
7. 1 PCIe 3.0 x16
1 PCIe 2.0 x1
1 PCIe 2.0 x16 (x4 elec)
1 PCI

Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium families
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard

Mechanical

- Raven black color; metal case
- Rack-mountable to 5U
- 6.89"W x 16.97"D x 14.76"H
- 175mm W x 431mm D x 375mm H
- 28.66 lb (13kg) max configuration
- 25-liter

ThinkServer TS140 Platform Specifications - System Specifications (I of III)

Components	Specification																																																																																																																																																
Form factor	Tower, rack-mountable to 5U via ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)																																																																																																																																																
Chipset	Intel C226 Chipset																																																																																																																																																
Systems management	- Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors) - EasyStartup - EasyUpdate																																																																																																																																																
Processor	One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium G3000 families, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors. The following processors are supported: <table><thead><tr><th>Processor Number</th><th># of Cores</th><th># of Threads</th><th>Clock Speed</th><th>Max Turbo Frequency</th><th>Cache</th><th>Memory speed</th><th>ECC Memory Supported</th><th>Processor Graphics</th></tr></thead><tbody><tr><td>Xeon E3-1285 v3</td><td>4</td><td>8</td><td>3.6 GHz</td><td>4 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4700</td></tr><tr><td>Xeon E3-1280 v3</td><td>4</td><td>8</td><td>3.6 GHz</td><td>4 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1275 v3</td><td>4</td><td>8</td><td>3.5 GHz</td><td>3.9 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4600</td></tr><tr><td>Xeon E3-1270 v3</td><td>4</td><td>8</td><td>3.5 GHz</td><td>3.9 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1245 v3</td><td>4</td><td>8</td><td>3.4 GHz</td><td>3.8 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4600</td></tr><tr><td>Xeon E3-1240 v3</td><td>4</td><td>8</td><td>3.4 GHz</td><td>3.8 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1230 v3</td><td>4</td><td>8</td><td>3.3 GHz</td><td>3.7 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1225 v3</td><td>4</td><td>4</td><td>3.2 GHz</td><td>3.6 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4600</td></tr><tr><td>Xeon E3-1220 v3</td><td>4</td><td>4</td><td>3.1 GHz</td><td>3.5 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Core i3-4340</td><td>2</td><td>4</td><td>3.6 GHz</td><td></td><td>4 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4600</td></tr><tr><td>Core i3-4330</td><td>2</td><td>4</td><td>3.5 GHz</td><td></td><td>4 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4600</td></tr><tr><td>Core i3-4130</td><td>2</td><td>4</td><td>3.4 GHz</td><td></td><td>3 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics 4400</td></tr><tr><td>Pentium G3430</td><td>2</td><td>2</td><td>3.3 GHz</td><td></td><td>3 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics</td></tr><tr><td>Pentium G3420</td><td>2</td><td>2</td><td>3.2 GHz</td><td></td><td>3 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics</td></tr><tr><td>Pentium G3220</td><td>2</td><td>2</td><td>3 GHz</td><td></td><td>3 MB</td><td>DDR3-1333</td><td>Yes</td><td>Intel HD Graphics</td></tr></tbody></table> Notes: All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/	Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics	Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4700	Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600	Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600	Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600	Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes		Core i3-4340	2	4	3.6 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600	Core i3-4330	2	4	3.5 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600	Core i3-4130	2	4	3.4 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics 4400	Pentium G3430	2	2	3.3 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics	Pentium G3420	2	2	3.2 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics	Pentium G3220	2	2	3 GHz		3 MB	DDR3-1333	Yes	Intel HD Graphics
Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics																																																																																																																																									
Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4700																																																																																																																																									
Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes																																																																																																																																										
Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600																																																																																																																																									
Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes																																																																																																																																										
Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600																																																																																																																																									
Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes																																																																																																																																										
Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes																																																																																																																																										
Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600																																																																																																																																									
Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes																																																																																																																																										
Core i3-4340	2	4	3.6 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600																																																																																																																																									
Core i3-4330	2	4	3.5 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600																																																																																																																																									
Core i3-4130	2	4	3.4 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics 4400																																																																																																																																									
Pentium G3430	2	2	3.3 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics																																																																																																																																									
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Pentium G3220	2	2	3 GHz		3 MB	DDR3-1333	Yes	Intel HD Graphics																																																																																																																																									
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available																																																																																																																																																
Memory DIMM sockets	Four 240-pin DIMM sockets																																																																																																																																																
Memory capacity	Up to 32GB (8GBx4)																																																																																																																																																
Memory protection	ECC																																																																																																																																																
Additional memory disclaimers	Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs																																																																																																																																																
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support																																																																																																																																																
Drive bays	Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):   1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay 3: Optional 3rd 2.5" drive bay 4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay Notes: - Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only - Image above is for reference only. Model in this image contains optional slim optical + 3.5" 2nd hard drive bay with supplemental fan (Bay 1) and optional 3.5" 3rd hard drive bay (Bay 2) - Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive bay (Bay 3) can not be supported concurrently on one model.																																																																																																																																																

ThinkServer TS140 Platform Specifications (II of III)

Components	Specification		
Optical	Supports DVD±RW or DVD ROM, 1.6" high or slim, SATA interface		
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB		
Front ports	Two USB 3.0 (blue)		
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)		
Expansion Slots	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3		
Onboard Ethernet	One onboard gigabit ethernet, Intel I217		
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1GbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)		
Keyboard/mouse	None (use USB port)		
Power supply	Supports one of the follwing, depending on models: - One fixed 280 watts, autosensing, 85% PSU, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified		
Security	- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) - Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal) - Power-on password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)		
Mechanical	- Raven black color; metal case 6.89"W x 16.97"D x 14.76"H 175mm W x 431mm D x 375mm H 28.66 lb (13kg) max configuration 25-liter		
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons		
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified - RoHS-compliant		
EMC	FCC Class A		
240VA	Supports		
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)		
Temperature - non operating (no package)	-10 °C to 60 °C		
Temperature - non operating (with package)	-40 °C to 70 °C		
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)		
Humidity - operating	10%~80%, non-condensing		
Humidity - non operating (no package)	10%~90%, non-condensing		
Humidity - non operating (with package)	10%~90%, non-condensing		
Acoustic noise (idle/working mode)	Category	Min Configuration	Best Configuration
	CPU	1 CPU	1 CPU
	Optical Drive	0 DVD	1 DVD
	Drive Bays	Up to one	Up to three
	HDD	1x 500GB SATA	3x 500GB SATA
	Memory	1x 2GB UDIMM	1x 2GB UDIMM
	PSU	280W	450W
	RAID	Embedded SATA	Embedded RAID
	Add-on card	No	1xVGA
	Sound Pressure (operating)	26 dB(A)	35 dB(A)
	Sound Pressure (idle)	25 dB(A)	34 dB(A)

ThinkServer TS140 Platform Specifications - System Specifications (III of III)

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see S-TS1 and S-TS3 sheet
Preloaded operating systems	• Windows Server® 2012 Foundation • Windows Server 2012 Essentials • Windows Server 2012 Standard
Supported operating systems and virtualization software	• Windows 7 • Windows 8 • Windows Server 2008 R2 Standard • Windows Server 2008 R2 Enterprise • Windows Small Business Server 2011 Essentials • Windows Small Business Server 2011 Standard • Windows Small Business Server 2011 Premium Add-On <i>Notes:</i> 1. Supported only, no preloaded models 2. Windows 7 and Windows 8 are not supported by EasyStartup

ThinkServer TS140 Optional Configurations

Memory	
ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19498
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19499
ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19500
Disk Drive	
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19504
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
Connectivity	
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
ThinkServer CT2 1Gbps Single Port Base-T Ethernet Adapter by Intel	4XC0F28725
Parallel/Serial Port Adapter	
ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adapter	0C19510
ThinkServer Dual Serial Port PCIe Adapter	0C19511
Graphics	
ThinkServer 1GB Quadro 600 Graphic Adapter by NVIDIA	0C19512
ThinkServer 512MB NVS 300 PCIe x16 Graphic Adapter by NVIDIA	0C19513
3.5" Hard Drive Conversion Kit	
ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515

For more information on server accessories, please visit:

www.lenovo.com/support/accessories

www.lenovo.com/support/thinkserveraccessories

www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

ThinkServer TS140 (70A4) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4001LUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001MUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001NUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001QUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Foundation	1
70A4001RUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Essentials	1
70A4001SUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1

¹ Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet

Left

Front

Drive bays

- Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
- Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
- Optional 3rd 2.5" drive bay
- Standard 3.5"/2.5" primary drive bay
- Standard 3.5"/2.5" 2nd drive bay

Note:
4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
3x3.5" bays models: Bay 2, 4, 5 are included in models
2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots

Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
Slot 2: half-length, full-height, PCIe 2.0 x1
Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Slot 4: half-length, full-height, PCI 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

See footnotes for important warranty information
Model(s) announced September 10, 2013

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(70A4-1) September 2013

ThinkServer TS140 (70A5) - TopSeller (September 2013)

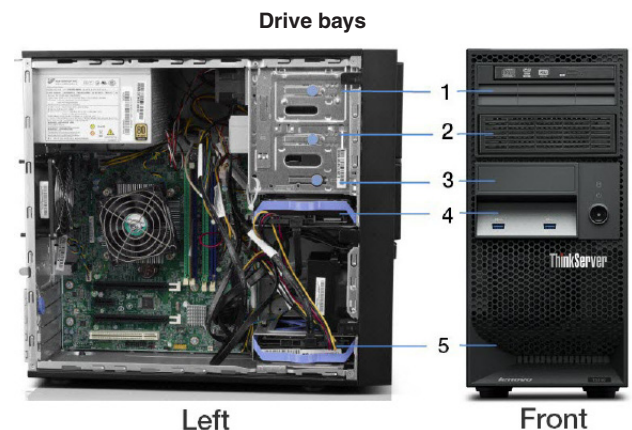
Product Specifications Reference (PSREF)

Type-model*	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A5000BUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	450W	No	No	1

* Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet



- 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
3: Optional 3rd 2.5" drive bay
4: Standard 3.5"/2.5" primary drive bay
5: Standard 3.5"/2.5" 2nd drive bay

Note:
4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
3x3.5" bays models: Bay 2, 4, 5 are included in models
2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots

- Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
Slot 2: half-length, full-height, PCIe 2.0 x1
Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Slot 4: half-length, full-height, PCI 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

ThinkServer TS140 (70A0) - September 2013

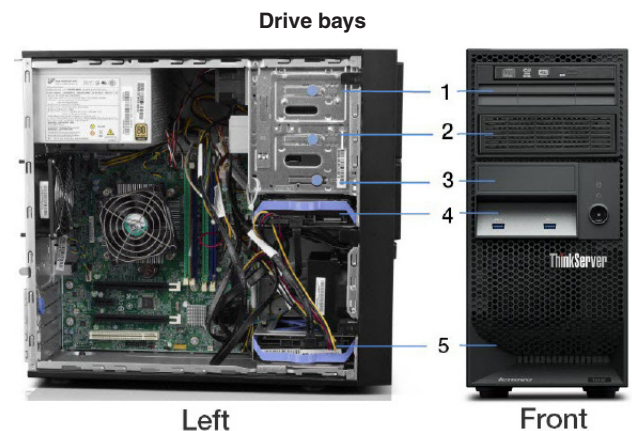
Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage (Drive bays)	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A00003US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	1xParallel	1x350-T2	280W	No	Foundation	1
70A00006US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	2xIntel CT	280W	No	Foundation	1
70A00009UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000AUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000BUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000CUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000DUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1

¹ Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel i217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet



- 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
- 2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
- 3: Optional 3rd 2.5" drive bay
- 4: Standard 3.5"/2.5" primary drive bay
- 5: Standard 3.5"/2.5" 2nd drive bay

Note:
 4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
 3x3.5" bays models: Bay 2, 4, 5 are included in models
 2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots

- Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
 Slot 2: half-length, full-height, PCIe 2.0 x1
 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
 Slot 4: half-length, full-height, PCI 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

See footnotes for important warranty information
 Model(s) announced September 10, 2013

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ThinkServer TS140 (70A0) - September 2013 - II

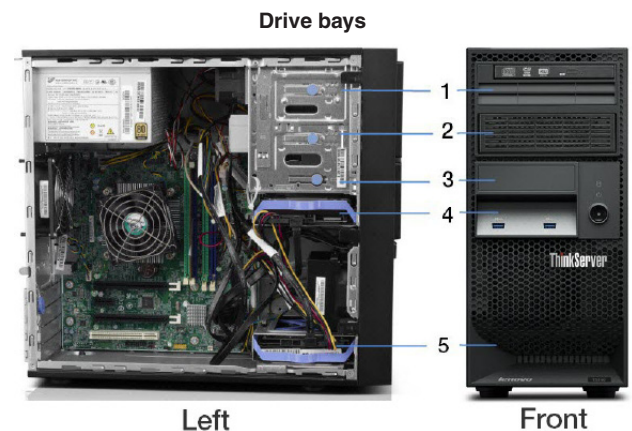
Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000EUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1
70A0000FUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000GUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000HUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000JUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000KUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1
70A0000LUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1

¹ Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter(2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet



- 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
- 2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
- 3: Optional 3rd 2.5" drive bay
- 4: Standard 3.5"/2.5" primary drive bay
- 5: Standard 3.5"/2.5" 2nd drive bay

Note:
4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
3x3.5" bays models: Bay 2, 4, 5 are included in models
2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots

- Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
Slot 2: half-length, full-height, PCIe 2.0 x1
Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Slot 4: half-length, full-height, PCI 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

See footnotes for important warranty information
Model(s) announced September 10, 2013

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ThinkServer TS140 (70A0) - September 2013 - III

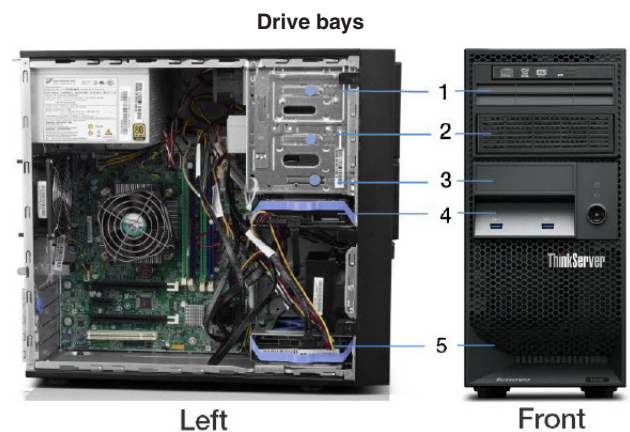
Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000MUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000NUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
70A0000PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx2	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
70A0000QUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3

¹ Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

- For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM <i>(Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)</i>
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter(2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (<i>Option PN: OC19515</i>)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet



- 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
- 2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
- 3: Optional 3rd 2.5" drive bay
- 4: Standard 3.5"/2.5" primary drive bay
- 5: Standard 3.5"/2.5" 2nd drive bay

Note:
4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
3x3.5" bays models: Bay 2, 4, 5 are included in models
2x3.5" bays models: Bay 4, 5 are included in models

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- Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
Slot 2: half-length, full-height, PCIe 2.0 x1
Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Slot 4: half-length, full-height, PCI 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

ThinkServer TS140 (70A1) - September 2013

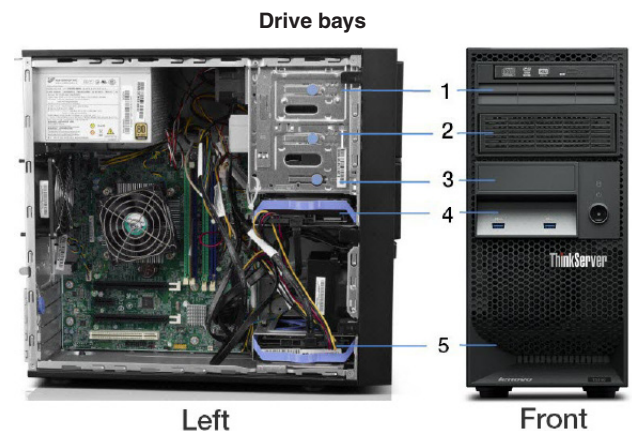
Product Specifications Reference (PSREF)

Type-model*	Processor	Memory type	Memory DIMMs	Graphics	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A10000US	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	NVS 300	RAID 10	4x4TB 3.5 SATA (4x3.5" Bay)	Slim DVD±RW	1xParallel	2xIntel CT	450W	No	Foundation	1
70A10001US	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Quadro 600	RAID 10	4x2TB 3.5 SATA (4x3.5" Bay)	Slim DVD±RW	No	1xIntel CT	450W	No	Foundation	1

* Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see [ThinkServer TS140 Platform Specifications sheet](#)

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	- Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB - NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter(2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified - One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (<i>Option PN: 0C19515</i>)
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal (standard bays) - Toolless adapter retention - Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified/ - RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet



- Drive bays**
- 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
3: Optional 3rd 2.5" drive bay
4: Standard 3.5"/2.5" primary drive bay
5: Standard 3.5"/2.5" 2nd drive bay

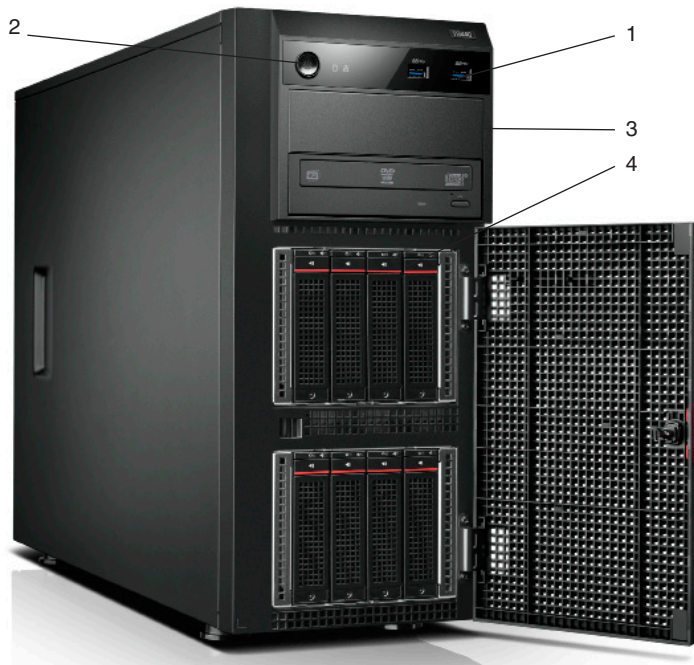
Note:
4x3.5" bays models: Bay 1, 2, 4, 5 are included in models
3x3.5" bays models: Bay 2, 4, 5 are included in models
2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots	
Slot 1:	half-length, full-height, PCIe 3.0 x16 (near CPU)
Slot 2:	half-length, full-height, PCIe 2.0 x1
Slot 3:	half-length, full-height, PCIe 2.0 x16 (x4 elec)
Slot 4:	half-length, full-height, PCI 2.3
Security	
- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) - Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal) - Power-on password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)	

See footnotes for important warranty information
Model(s) announced September 10, 2013

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(70A1-1) September 2013

ThinkServer TS440 - Overview

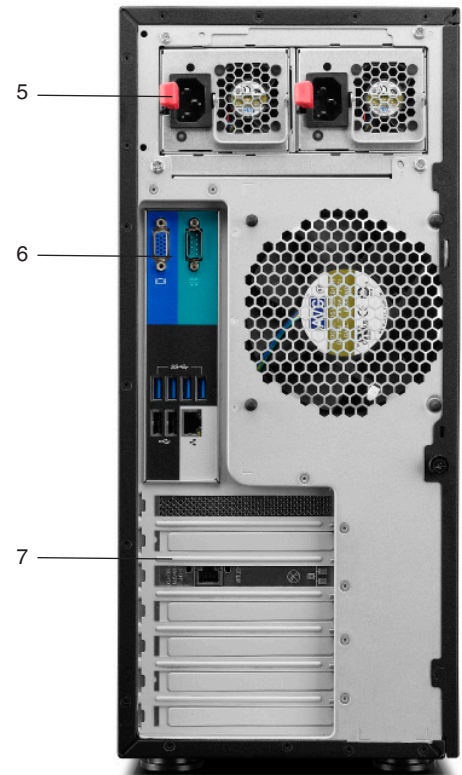


Front view

1. Front I/O: 2 USB 3.0 (blue)
2. Power Button
3. Two 5.25" optical drive bays
(up to one optical on models with onboard SATA controller)
4. Eight 3.5" hot-swap drive bays
(Also supports:
4 x 3.5" direct cable bays,
or 4 x 3.5" hot-swap bays,
or 8 x 2.5" hot-swap bays)

Rear view

5. Power Supply:
Up to two redundant 450 watts 80 PLUS Gold or
fixed one 450 watts 80 PLUS Platinum
6. Rear I/O: 2 USB 2.0
4 USB 3.0 (blue)
1 serial (9-pin)
1 RJ-45 (GbE)
1 VGA (for Intel HD Graphics)
7. 1 PCIe 3.0 x16 (with optional RAID adapter)
1 PCIe 2.0 x1
1 PCIe 2.0 x16 (x4 elec, with optional ethernet adapter)
1 PCI



Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3 family
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to eight hard drive bays

Mechanical

- Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 61.7 lb (28kg) max configuration

ThinkServer TS440 Platform Specifications - I of III

Components	Specification																																																																																										
Form factor	Tower, rack-mountable to 5U via ThinkServer Tower to Rack Shelf Conversion Kit (<i>Option PN: 0C19515</i>)																																																																																										
Chipset	Intel C226 Chipset																																																																																										
Systems management	- Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) - EasyStartup - EasyUpdate																																																																																										
Processor	One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3 family, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on Xeon E5-12X5 v3 processors. The following processors are supported: <table><tr><th>Processor Number</th><th># of Cores</th><th># of Threads</th><th>Clock Speed</th><th>Max Turbo Frequency</th><th>Cache</th><th>Memory speed</th><th>ECC Memory Supported</th><th>Processor Graphics</th></tr><tr><td>Xeon E3-1285 v3</td><td>4</td><td>8</td><td>3.6 GHz</td><td>4 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics P4700</td></tr><tr><td>Xeon E3-1280 v3</td><td>4</td><td>8</td><td>3.6 GHz</td><td>4 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1275 v3</td><td>4</td><td>8</td><td>3.5 GHz</td><td>3.9 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics P4600</td></tr><tr><td>Xeon E3-1270 v3</td><td>4</td><td>8</td><td>3.5 GHz</td><td>3.9 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1245 v3</td><td>4</td><td>8</td><td>3.4 GHz</td><td>3.8 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics P4600</td></tr><tr><td>Xeon E3-1240 v3</td><td>4</td><td>8</td><td>3.4 GHz</td><td>3.8 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1230 v3</td><td>4</td><td>8</td><td>3.3 GHz</td><td>3.7 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr><tr><td>Xeon E3-1225 v3</td><td>4</td><td>4</td><td>3.2 GHz</td><td>3.6 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td>Intel HD Graphics P4600</td></tr><tr><td>Xeon E3-1220 v3</td><td>4</td><td>4</td><td>3.1 GHz</td><td>3.5 GHz</td><td>8 MB</td><td>DDR3-1600</td><td>Yes</td><td></td></tr></table> <i>Notes:</i> All information is provided by Intel and may be changed at any time without notice. The information herein is provided “as-is”. Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/	Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics	Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4700	Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600	Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600	Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes		Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600	Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes	
Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics																																																																																			
Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4700																																																																																			
Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes																																																																																				
Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600																																																																																			
Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes																																																																																				
Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600																																																																																			
Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes																																																																																				
Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes																																																																																				
Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600																																																																																			
Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes																																																																																				
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available																																																																																										
Memory DIMM sockets	Four 240-pin DIMM sockets																																																																																										
Memory capacity	Up to 32GB (8GBx4)																																																																																										
Memory protection	ECC																																																																																										
Additional memory disclaimers	Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs																																																																																										
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support																																																																																										
Discreted SATA/SAS controller (optional)	Supports the following: - ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support - ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter <i>Notes:</i> RAID 50 and 60 are supported on 8 hard drive bays models only																																																																																										
Drive bays	Supports two 5.25" optical bays, up to two optical drives (up to one optical on models with onboard SATA controller); supports up to eight hard drive bays, one of the following are supported: 4 x 3.5" DC: Four 3.5" hard drive bays, no hot-swap, direct cable (onboard RAID 100 controller, SATA only) 4 x 3.5" HS: Four 3.5" hot-swap hard drive bays (onboard RAID 100 controller for SATA, discrete RAID adapter for SATA/SAS) 8 x 3.5" HS: Eight 3.5" hot-swap hard drive bays (needs discreted RAID adapter, supports SATA/SAS) 8 x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs discreted RAID adapter, supports SATA/SAS)  8 x 2.5" hot-swap 4 x 3.5" hot-swap 8 x 3.5" hot-swap <i>Notes:</i> Hard drive bays are behind front cover																																																																																										

ThinkServer TS440 Platform Specifications - II of III

Components	Specification
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface
Graphics	- Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) - Also supports the following optional discrete graphics adapters: - NVIDIA NVS 300, PCIe x1 adapter, 512MB
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Expansion Slots	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/mouse	None (use USB port)
Power supply	Supports one of the following, depending on models: - One fixed 450 watts, universal, 80 PLUS[®] Platinum qualified - Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Security	- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Administrator password - User password - Front panel key lock - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)
Mechanical	- Tower, business black color, metal case - W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration - Rack-mountable to 5U
Serviceability	- Toolless side cover removal - Toolless disk and optical drive removal - Toolless adapter retention - Illuminated front icons
Environmental certifications	- GREENGUARD[®] certified - Energy Star Server 1.1 qualified - RoHS-compliant
EMC	FCC Class A
240VA	Supports
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
Temperature - non operating (no package)	-10 °C to 60 °C
Temperature - non operating (with package)	-40 °C to 70 °C
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)
Humidity - operating	10%~80%, non-condensing
Humidity - non operating (no package)	10%~90%, non-condensing
Humidity - non operating (with package)	10%~90%, non-condensing
Acoustic noise (idle/working mode)	Category
	Mainstream Configuration
	Full Configuration
	CPU
	Xeon
	Xeon
	Optical Drive
	DVD-ROM
	DVD-ROM
	HDD Controller
	onboard SATA
	SAS Controller
Acoustic noise (idle/working mode)	HDD Bays
	4 x 3.5" SATA (direct cable)
	8 x 3.5" SAS (hot-swap)
	HDD
	4x 1TB SATA
	8x 600GB SAS
	Memory
	1 x 2GB UDIMM ECC
	4 x 4GB UDIMM ECC
	PSU
	Fixed
	Redundant
Acoustic noise (idle/working mode)	Management
	Basic IPMI mgmt, reporting
	Basic IPMI mgmt, reporting
	RAID
	SATA RAID 0/1
	SAS RAID 5
	Sound Pressure (operating)
	40.5 dB(A)
	42.0 dB(A)
	Sound Pressure (idle)
	32.0 dB(A)
	38.0 dB(A)

ThinkServer TS440 Platform Specifications - III of III

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see S-TS1 and S-TS3 sheet
Preloaded operating systems	• Windows Server® 2012 Foundation • Windows Server 2012 Essentials • Windows Server 2012 Standard
Supported operating systems and virtualization software	• Windows Server 2008 R2 Standard • Windows Server 2008 R2 Enterprise • Windows Server 2012 Datacenter • Windows Small Business Server 2011 Essentials • Windows Small Business Server 2011 Standard • Windows Small Business Server 2011 Premium Add-On • Red Hat Enterprise Linux 6.4 • VMware ESXi 5.1 U1 (Discrete RAID controller, add-on ethernet controller, and Intel Xeon E3-12x5 v3 processors are needed) <i>Notes:</i> 1. Supported only, no preloaded models 2. For latest VMware compatibility list for ThinkServer, please see http://www.vmware.com/resources/compatibility/search.php 3. For latest Red Hat compatibility list for ThinkServer, please see https://hardware.redhat.com/ 4. These supported operating systems are also supported by EasyStartup

ThinkServer TS440 Optional Configurations

Memory	
ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19498
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19499
ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19500
Disk Drive	
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19504
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89474
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89477
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520
ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619
ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2621
ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409
ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494
ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495
Connectivity	
ThinkServer RAID 500 Adapter II	0A89464
ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407
ThinkServer RAID 700 Adapter II	0A89463
ThinkServer RAID 700 Battery	67Y2647
Connectivity	
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
Parallel/Serial Port Adapter	
ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adapter	0C19510
ThinkServer Dual Serial Port PCIe Adapter	0C19511
Graphics	
ThinkServer 512MB NVS 300 PCIe x1 Graphic Adapter by NVIDIA	0C19528
3.5" Hard Drive Conversion Kit	
ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515
Redundant Power Supply	
ThinkServer 450W Gold Hot Swap Redundant Power Supply	67Y2625

For more information on server accessories, please visit:

www.lenovo.com/support/accessories

www.lenovo.com/support/thinkserveraccessories

www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

ThinkServer TS440 (70AQ) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays ²	RAID controller	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ0005US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Foundation	1x450W (hot-swap, redundant with 2)	3
70AQ0006US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Essentials	1x450W (hot-swap, redundant with 2)	3
70AQ0007US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Standard	1x450W (hot-swap, redundant with 2)	3
70AQ0009UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000AUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000BUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000CUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3

1. Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see [ThinkServer TS440 Platform Specifications sheet](#)

Systems management	- Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) - EasyStartup - EasyUpdate	Optical Bays - Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models) Hard Drive Bays - Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC) - Four 3.5" hot-swap hard drive bays (4x3.5" HS) - Eight 3.5" hot-swap hard drive bays (8x3.5" HS) - Eight 2.5" hot-swap hard drive bays (8x2.5" HS)  8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
Chipset	Intel C226 Chipset	
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	- Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) - Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/SAS controller (optional)	Supports the following: - ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support - ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter <i>Notes:</i> RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	
Front ports	Two USB 3.0 (blue)	
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)	
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	Mechanical - Tower, business black color, metal case - W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration - Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) - Toolless side cover removal - Toolless disk and optical drive removal - Toolless adapter retention - Illuminated front icons Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3 Security - Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Administrator password - User password - Front panel key lock - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)
Power supply	Supports one of the following, depending on models: - One fixed 450 watts, universal, 80 PLUS® Platinum qualified - Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	
Base warranty	1 or 3-year parts and labor limited warranty ¹	
Environmental certifications	- GREENGUARD® certified - Energy Star Server 1.1 qualified - RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	

See footnotes for important warranty information
Model(s) announced September 24, 2013

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ThinkServer TS440 (70AQ) - TopSeller (September 2013) - II

Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays ²	RAID controller	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ000DUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000EUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000FUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000GUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000HUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000NUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000PUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

1. Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see [ThinkServer TS440 Platform Specifications sheet](#)

Systems management	- Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) - EasyStartup - EasyUpdate	Optical Bays Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays - Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC) - Four 3.5" hot-swap hard drive bays (4x3.5" HS) - Eight 3.5" hot-swap hard drive bays (8x3.5" HS) - Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	- Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) - Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/SAS controller (optional)	Supports the following: - ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support - ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	
Front ports	Two USB 3.0 (blue)	
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)	
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Mechanical - Tower, business black color, metal case - W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration - Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) - Toolless side cover removal - Toolless disk and optical drive removal - Toolless adapter retention - Illuminated front icons
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the following, depending on models: - One fixed 450 watts, universal, 80 PLUS Platinum qualified - Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
Base warranty	1 or 3-year parts and labor limited warranty ¹	Security - Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Administrator password - User password - Front panel key lock - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)
Environmental certifications	- GREENGUARD certified - Energy Star Server 1.1 qualified - RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	

See footnotes for important warranty information
 Model(s) announced September 24, 2013

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ThinkServer TS440 (70AN) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays ²	RAID controller	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AN0001UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	1
70AN0002UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

1. Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

- For detailed ThinkServer TS440 platform specifications, please see [ThinkServer TS440 Platform Specifications sheet](#)

Systems management	• Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) • EasyStartup • EasyUpdate	Optical Bays • Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays • Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC) • Four 3.5" hot-swap hard drive bays (4x3.5" HS) • Eight 3.5" hot-swap hard drive bays (8x3.5" HS) • Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	• Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) • Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/SAS controller (optional)	Supports the following: • ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support • ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	
Front ports	Two USB 3.0 (blue)	
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	
Add-on ports (optional)	Supports the following: • Single Parallel Port PCI Adapter (1xParallel) • Single Serial Port PCI Adapter (1xSerial) • Dual Serial Ports PCI Adapter (2xSerial PCI) • Dual Serial Ports PCIe Adapter (2xSerial PCIe)	
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: • Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) • Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) • Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the following, depending on models: • One fixed 450 watts, universal, 80 PLUS[®] Platinum qualified • Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	
Base warranty	1 or 3-year parts and labor limited warranty ¹	
Environmental certifications	• GREENGUARD[®] certified • Energy Star Server 1.1 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	 8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
		Mechanical • Tower, business black color, metal case • W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm • 61.7 lb (28kg) max configuration • Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) • Toolless side cover removal • Toolless disk and optical drive removal • Toolless adapter retention • Illuminated front icons
		Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
		Security • Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant • Administrator password • User password • Front panel key lock • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all)

See footnotes for important warranty information
Model(s) announced September 24, 2013

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Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays ²	RAID controller	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AM0000US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx2	Intel HD P4600	4x3.5" DC	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD	No	1xIntel CT	Foundation	1x450W (hot-swap, redundant with 2)	1
70AM0001US	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	8x3.5" HS	RAID 500+key (discrete, 0/1/5/10/50)	RAID 50	8x2TB 3.5" SATA	2xDVD±RW	No	1xIntel CT	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0002UX	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	4GBx3	NVS 300	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 6	3x600GB 2.5" SAS	1xDVD	No	1x350-T4	No	1x450W (hot-swap, redundant with 2)	1
70AM0003US	Xeon E3-1285 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4700	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 60	8x900GB 2.5" SAS	1xDVD±RW	No	1x350-T2	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0004UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

1. Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see [ThinkServer TS440 Platform Specifications sheet](#)

Systems management	- Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) - EasyStartup - EasyUpdate	Optical Bays Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays - Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC) - Four 3.5" hot-swap hard drive bays (4x3.5" HS) - Eight 3.5" hot-swap hard drive bays (8x3.5" HS) - Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	- Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) - Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/SAS controller (optional)	Supports the following: - ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support - ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	
Front ports	Two USB 3.0 (blue)	
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	
Add-on ports (optional)	Supports the following: - Single Parallel Port PCI Adapter (1xParallel) - Single Serial Port PCI Adapter (1xSerial) - Dual Serial Ports PCI Adapter (2xSerial PCI) - Dual Serial Ports PCIe Adapter (2xSerial PCIe)	
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: - Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) - Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the following, depending on models: - One fixed 450 watts, universal, 80 PLUS Platinum qualified - Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	
Base warranty	1 or 3-year parts and labor limited warranty ¹	
Environmental certifications	- GREENGUARD certified - Energy Star Server 1.1 qualified - RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	Mechanical - Tower, business black color, metal case - W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration - Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) - Toolless side cover removal - Toolless disk and optical drive removal - Toolless adapter retention - Illuminated front icons
		Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
		Security - Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant - Administrator password - User password - Front panel key lock - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (front or all)

See footnotes for important warranty information
 Model(s) announced September 24, 2013

ThinkServer TS440 (70AL) - September 2013

Product Specifications Reference (PSREF)

Type-model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays ²	RAID controller	Pre-conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AL0000US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx3	NVS 300	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 5	3x3TB 3.5" SATA	1xDVD±RW	No	1x350-T2	Foundation	Fixed 450W (non-hot swap, no redundant)	1
70AL0002UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	1x500GB 3.5" SATA	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3
70AL0003UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

1. Model in *italics* shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

- For detailed ThinkServer TS440 platform specifications, please see [ThinkServer TS440 Platform Specifications sheet](#)

Systems management	• Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) • EasyStartup • EasyUpdate	Optical Bays • Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays • Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC) • Four 3.5" hot-swap hard drive bays (4x3.5" HS) • Eight 3.5" hot-swap hard drive bays (8x3.5" HS) • Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	• Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see Rear ports section) • Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/SAS controller (optional)	Supports the following: • ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support • ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	
Front ports	Two USB 3.0 (blue)	
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	
Add-on ports (optional)	Supports the following: • Single Parallel Port PCI Adapter (1xParallel) • Single Serial Port PCI Adapter (1xSerial) • Dual Serial Ports PCI Adapter (2xSerial PCI) • Dual Serial Ports PCIe Adapter (2xSerial PCIe)	
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: • Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) • Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) • Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the following, depending on models: • One fixed 450 watts, universal, 80 PLUS® Platinum qualified • Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	
Base warranty	1 or 3-year parts and labor limited warranty ¹	
Environmental certifications	• GREENGUARD® certified • Energy Star Server 1.1 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	Mechanical • Tower, business black color, metal case • W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm • 61.7 lb (28kg) max configuration • Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) • Toolless side cover removal • Toolless disk and optical drive removal • Toolless adapter retention • Illuminated front icons
		Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
		Security • Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant • Administrator password • User password • Front panel key lock • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all)

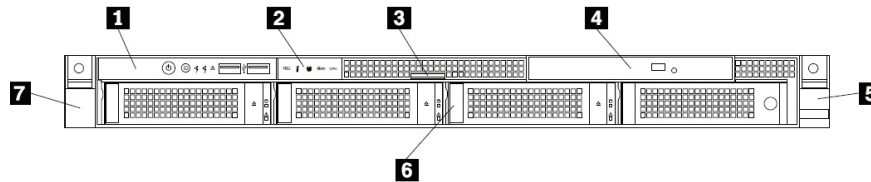
See footnotes for important warranty information
 Model(s) announced September 24, 2013

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 (70AL-1) October 2013

ThinkServer RD340 Overview

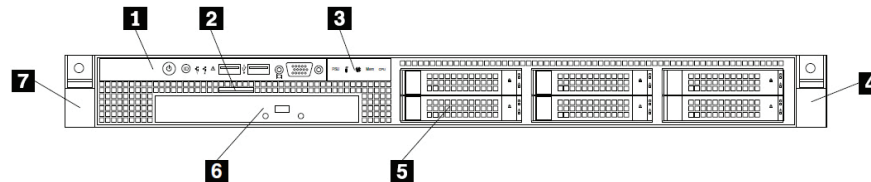
Front view - ThinkServer RD340 supports the following disk bay configurations:

ThinkServer RD340 with 4 x 3.5" Disk Drive Bays



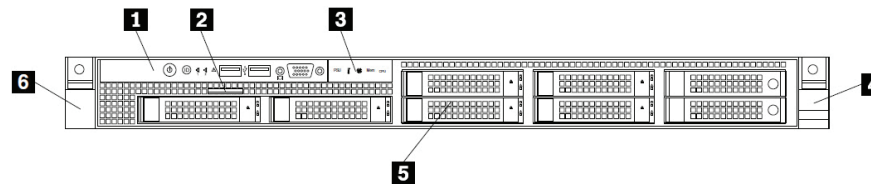
1. Front panel
 - Power Button with LED
 - ID button with LED
 - 2 Network interface status LEDs
 - System error LED
 - 2 USB 2.0
2. Intelligent Diagnostics Module (IDM basic only, optional)
3. Pull-out information card
4. Slim optical drive (optional)
5. Rack handle (right)
6. 4 x 3.5" hot-swap disk drive bays
7. Rack handle (left)

ThinkServer RD340 with 6 x 2.5" Disk Drive Bays



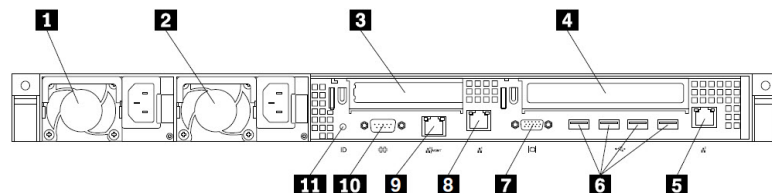
1. Front panel
 - Power Button with LED
 - ID button with LED
 - 2 Network interface status LEDs
 - System error LED
 - 2 USB 2.0
 - 1 VGA
2. Pull-out information card
3. Intelligent Diagnostics Module (IDM basic only, optional)
4. Rack handle (right)
5. 6 x 2.5" hot-swap disk drive bays
6. Slim optical drive (optional)
7. Rack handle (left)

ThinkServer RD340 with 8 x 2.5" Disk Drive Bays



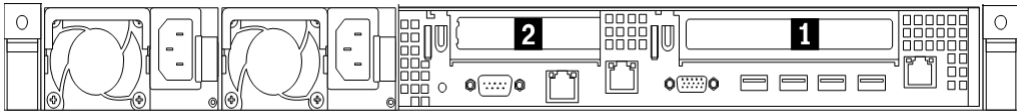
1. Front panel
 - Power Button with LED
 - ID button with LED
 - 2 Network interface status LEDs
 - System error LED
 - 2 USB 2.0
 - 1 VGA
2. Pull-out information card
3. Intelligent Diagnostics Module (IDM basic only, optional)
4. Rack handle (right)
5. 8 x 2.5" hot-swap disk drive bays
6. Rack handle (left)

Rear view



1. Hot-swap redundant power supply 2 (optional)
2. Hot-swap redundant power supply 1
3. Low profile PCI Express slot by riser card 2
4. PCI Express slot by riser card 1
5. Ethernet 2 (RJ-45)
6. Four USB 2.0
7. VGA DB-15 connector
8. Ethernet 1 (RJ-45)
9. Dedicate/share management connector (RJ-45)
10. Serial
11. ID LED

ThinkServer RD340 Platform Systems Specifications - I of II

Components	Specifications																									
Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured																									
Chipset	Intel C606 Chipset																									
Processors	Two LGA1356 sockets, supports up to two processors from Intel Xeon E5-2400 or Xeon E5-2400 v2 families, up to 8 cores (E5-2400 series)/10 cores (E5-2400 v2 series), one QPI links up to 8.0GT/s, up to 20MB (E5-2400 series)/25MB (E5-2400 v2 series) cache, integrated 3-channel DDR3 memory controller up to 1600MHz																									
Memory type	1600MHz, LV RDIMM*, DDR3, 3-channel per processor, 240-pin <i>* By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting</i>																									
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor																									
Memory protection	ECC, memory mirroring, memory sparing																									
Disk bays configurations	Supports one of the following configurations • 4 x 3.5" disk bays + 1 x slim optical bay • 6 x 2.5" disk bays + 1 x slim optical bay • 8 x 2.5" disk bays																									
RAID support	<table><tr><th>RAID adapter</th><th>RAID support</th><th>Cache</th><th>Transfer rates</th><th>Optional upgrades</th></tr><tr><td>RAID 300 (onboard)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5 support</td></tr><tr><td>RAID 500 (LSI 9240-8i)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5, 50 support</td></tr><tr><td>RAID 700 (LSI 9260-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>512MB</td><td>6Gb/s</td><td>optional intelligent Battery Backup Unit (iBBU08)</td></tr><tr><td>RAID 710 (LSI 9270CV-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>1GB</td><td>6Gb/s</td><td> • optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key </td></tr></table>	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key
RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades																						
RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support																						
RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support																						
RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)																						
RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key																						
Optical drive (optional)	4 x 3.5"/6 x 2.5" models: one slim optical bay, supports one optional slim optical 8 x 2.5" models: none optical bay, optional external USB optical is needed																									
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management																									
Front ports	One analog VGA DB-15 connector (for 6 x 2.5"/8 x 2.5" models), two USB 2.0																									
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector																									
Expansion Slots	 Two PCI-Express slots via two riser cards, riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)																									
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; <i>Maximum resolution: 1920x1200@60Hz</i>																									
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category																									
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Front control panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate																									
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant																									
Cable mgmt (opt)	Optional cable management arm on selected models																									

ThinkServer RD340 Platform Systems Specifications - II of II

Components	Specifications		
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies		
Hot-swap parts	Disk drives, power supplies, and cooling fans		
Security features	Power-on password/administrator password/Trusted Platform Module (TCG 1.2-compliant)		
Safety, environment, and certifications	Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant	
	EMC	FCC Class A, CSA, CE	
	240VA	Supports	
	Temperature - operating	50 ° F to 95 ° F (10 ° C to 35 ° C)	
	Temperature - non operating (no package)	-10 ° C to 60 ° C	
	Temperature - non operating (with package)	-40 ° C to 70 ° C	
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)	
	Humidity - operating	8%~80%, non-condensing	
	Humidity - non operating (no package)	8%~80%, non-condensing	
	Humidity - non operating (with package)	8%~90%, non-condensing	
	Acoustic noise (idle/working mode)	System Configuration	
		Category	
		Entry level	High-end
		CPU	1 2
		Memory	4GB x 1 4GB x 12
		Optical Drive	Slim optical Slim optical
		Drive Bays	4 x 3.5" 6 x 2.5"
		RAID	RAID500 RAID500
		HDD	2 x 500GB 3.5" SATA 6 x 300GB 2.5" SAS
		PSU	550Wx1 550Wx2
		Sound Pressure (operating)	45.28 dB(A) 44.74 dB(A)
		Sound Pressure (idle)	45.28 dB(A) 44.95 dB(A)

ThinkServer RD340 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	The following processor options are available:									
	Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Part Number
	Processors Specifications*									
	Intel Xeon E5-2400 v2 Series									
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	60W	DDR3-1600	0C19544
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543
	Intel Xeon E5-2600 v2 Series									
	Xeon E5-2450L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89450
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89444
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89445
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443
	Notes: All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/									
Memory options	Memory options								Part Number	
	ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM								0C19533	
	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM								0C19534	
	ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM								0C19535	

ThinkServer RD340 Optional Configurations - Storage and RAID

Disk drive options for 3.5" disk bay models (8 x 3.5"/12 x 3.5")	Hot-swap disk drive options for 3.5" bay		Part Number
	3.5" SATA Hard Drive		
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89473
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89474
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89475
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89477
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19520
	3.5" SAS Hard Drive		
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19530
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19531
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19532
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive		67Y2616
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive		4XB0F28644
	2.5" SSD for 3.5" disk bay		
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit		0C19571
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit		0C19572
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit		0C19573
Disk drive options for 2.5" disk bay models (8 x 2.5"/16 x 2.5")	Hot-swap disk drive options for 2.5" bay		Part Number
	2.5" SATA Hard Drive		
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19495
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19496
	2.5" SAS Hard Drive		
	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive		67Y2619
	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive		67Y2621
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive		0A89409
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive		0C19494
	2.5" SSD		
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive		0A89420
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive		0A89418
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive		0A89419
RAID options	RAID controller and RAID upgrade options		Part Number
	ThinkServer RAID 300 Upgrade Key for Advanced RAID		0A89422
	ThinkServer RAID 500 Adapter II		0A89464
	ThinkServer RAID 500 Upgrade Key for Advanced RAID		0A89407
	ThinkServer RAID 700 Adapter II		0A89463
	ThinkServer RAID 700 Battery		67Y2647
	ThinkServer RAID 710 Adapter		0C19489
	ThinkServer RAID Super Capacitor Module		0C19490
	ThinkServer RAID FastPath Software Key		0C19491
	ThinkServer RAID CacheCade Pro 2.0 Software Key		0C19492

ThinkServer RD340 Optional Configurations - Network, System Management, Power Supply

Network and HBA options	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by QLogic	0C19482
Security options	Trusted Platform Module options	Part Number
	ThinkServer Trusted Platform Module	0A89428
Systems management options	System Management option for iKVM	Part Number
	ThinkServer Management Module Premium	67Y2624
	Cable Management option	Part Number
	ThinkServer Cable management Arm	0A89476
Power supply options	Power supply option	Part Number
	ThinkServer 550W Gold Hot Swap Redundant Power Supply	4X20E54689

ThinkServer RD340 Operating System and Virtualization Supportability Matrix

List of operationg system and virtualization software supported on ThinkServer RD340

Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 x86 Edition				
Windows Server 2008 Standard Edition (x86)			•	
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2008 x64 Edition				
Windows Server 2008 Standard Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Datacenter Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 R2 (x64) with SP1				
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business Server 2011				
Windows Small Business Server 2011 Essentials	•		•	
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 2012				
Windows Server 2012 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 Hyper-V	•		•	
Windows Server 2012 R2				
Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V	•		•	
SUSE LINUX Enterprise Server x86				
SUSE LINUX Enterprise Server 10 sp4			•	
SUSE LINUX Enterprise Server 11 sp2	•		•	
SUSE LINUX Enterprise Server 11 sp3	•		•	
SUSE LINUX Enterprise Server x64				
SUSE LINUX Enterprise Server 10 sp4			•	
SUSE LINUX Enterprise Server 11 sp2	•		•	
RedHat Enterprise Linux Server (RHEL) x86				
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
RedHat Enterprise Linux Server x64				
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
Vmware x64				
Vmware ESXi 5.1 U1	•		•	•
Vmware ESXi 5.5	•	•	•	•
Microsoft Hyper V				
Microsoft Hyper-V server 2008	•		•	
Microsoft Hyper-v server 2008 R2 SP1	•		•	
Citrix				
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.0.2	•		•	

Note:

- For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: <http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html>
- For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer_OS_&Virtualization_Options_Datasheet.pdf

ThinkServer RD340 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD340 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

Upgrade Service Description	Part Number
Warranty	
3YR Onsite 24x7x4 Hour Response	5WS0F15458
3YR Onsite 24x7x8 Hour Response	5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response	5WS0F15430
5YR Onsite NBD	5WS0F15419
Keep Your Drive (KYD) Service	
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456
4YR Onsite NBD + KYD	5PS0F15459
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366
5YR Onsite NBD + KYD	5PS0F15391
Priority Technical Support	
3YR KYD + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0E76471
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + KYD + Priority Support	5PS0F15373
4YR Onsite NBD + Priority Support	5WS0F15401
4YR Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382
5YR Onsite NBD + KYD + Priority Support	5PS0F15388
5YR Onsite NBD + Priority Support	5WS0F15463
5YR Priority Support	5WS0E77173

Upgrade Service Description	Part Number
Post Warranty	
1YR Onsite 24x7x4 Hour Response	5WS0F15435
1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
1YR Onsite 24x7x8 Hour Response	5WS0F15427
1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
1YR Onsite 9x5x4 Hour Response	5WS0F15416
1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
1YR Onsite NBD	5WS0F15407
1YR Onsite NBD + Priority Support	5WS0F15465
TopSeller Priority (TopSeller models only)	
3YR Onsite 24x7x4 Hour Response	5WS0D73789
3YR Onsite 9x5x4 Hour Response	5WS0D73787
4YR Onsite 24x7x4 Hour Response	5WS0D73792
4YR Onsite 9x5x4 Hour Response	5WS0D73791
4YR Onsite NBD	5WS0F15470
3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
3YR Priority Support	5WS0E76457
4YR Priority Support	5WS0E76482

Note:

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer

Service Availability Tool: http://www.lenovo.com/services_warranty/us/en/locator.html

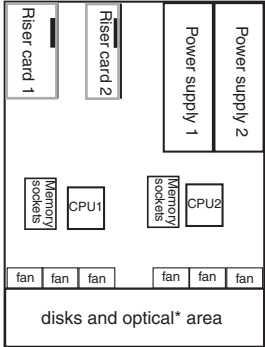
Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use

ThinkServer Service Activation page: <http://www.lenovo.com/activation>

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0004US	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	2nd	8GBx12 1600MHz LVRDIMM	4X3.5" HS	RAID700 +CacheVault +CacheCade	2x400GB SSD(RAID1,cache) +2x500GB 3.5" SATA(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AB0005UX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0006UX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0008UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	4GBx2 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0009UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	4GBx4 1600MHz LVRDIMM	4X3.5" HS	RAID700 +Battery	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB001TUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001UUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

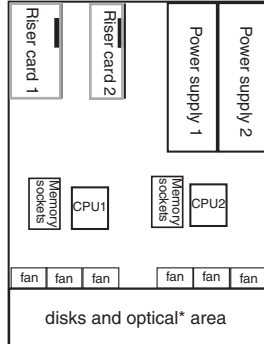
Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter		RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 300 (onboard)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support					
	RAID 500 (LSI 9240-8i)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support					
	RAID 700 (LSI 9260-8i)		0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i)		0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key					
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Top 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management					<i>* Slim optical bay is not available on 8 x 2.5" models</i>					
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2					Expansion Slots: Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCIe 3.0 x16 Slot 2: Low Profile, PCIe 3.0 x8 (x4 elec)					
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category					Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

See footnotes for more detailed information
Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB001VUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001WUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001XUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001YUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0020UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0021UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0022UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

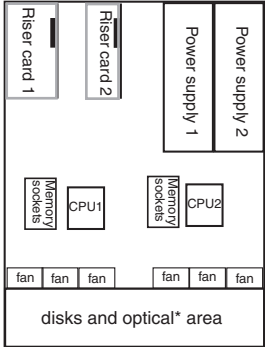
Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter		RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 300 (onboard)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support					
	RAID 500 (LSI 9240-8i)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support					
	RAID 700 (LSI 9260-8i)		0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i)		0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key					
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Top 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management					<i>* Slim optical bay is not available on 8 x 2.5" models</i>					
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2					Expansion Slots: Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCIe 3.0 x16 Slot 2: Low Profile, PCIe 3.0 x8 (x4 elec)					
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category					Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

See footnotes for more detailed information
Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0023UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0024UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0025UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0026UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0027UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0028UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0029UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

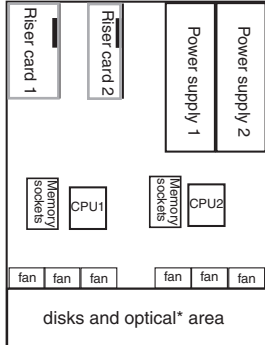
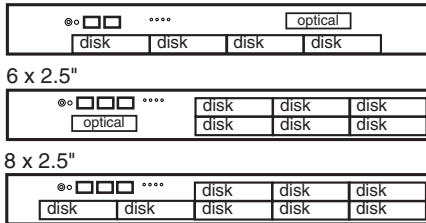
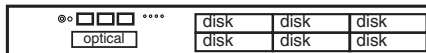
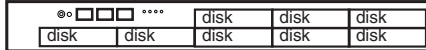
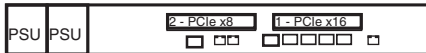
Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter		RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 300 (onboard)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support					
	RAID 500 (LSI 9240-8i)		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support					
	RAID 700 (LSI 9260-8i)		0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i)		0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key					
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Top 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management					<i>* Slim optical bay is not available on 8 x 2.5" models</i>					
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/i350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2					Expansion Slots: Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCIe 3.0 x16 Slot 2: Low Profile, PCIe 3.0 x8 (x4 elec)					
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category					Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

See footnotes for more detailed information
Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB002AUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	4x1TB 3.5" SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70AB002BUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID500 +upgrade	4x1TB 3.5" SAS	DVD±RW	350T4	No	iKVM	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  * Slim optical bay is not available on 8 x 2.5" models					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Front: Supports the following disk bay configurations: 4 x 3.5"  6 x 2.5"  8 x 2.5"  Rear 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/i350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

* Slim optical bay is not available on 8 x 2.5" models

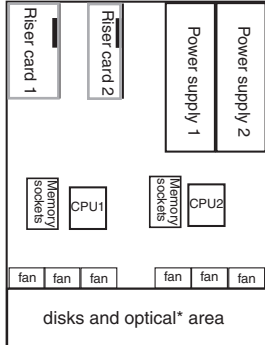
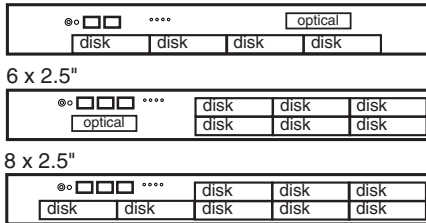
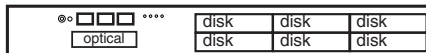
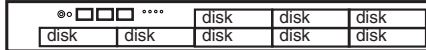
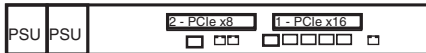
ThinkServer RD340 (70AC) - TopSeller - January 2014

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AC0000US	Xeon E5-2430L v2 6C/2.4GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	6X2.5" HS	RAID710 +CacheVault +FastPath	4x400GB SSD(RAID6) +2x400GB SSD(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  * Slim optical bay is not available on 8 x 2.5" models					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Front: Supports the following disk bay configurations: 4 x 3.5"  6 x 2.5"  8 x 2.5"  Rear 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/i350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

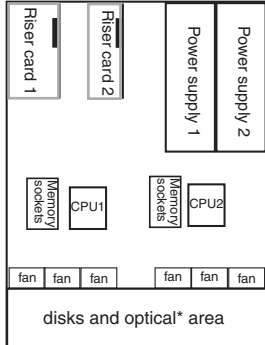
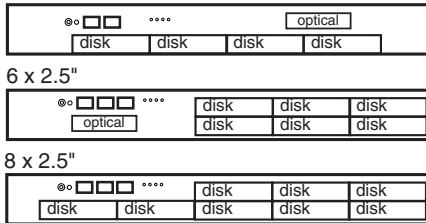
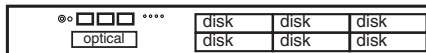
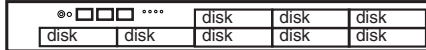
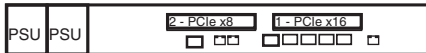
See footnotes for more detailed information
Model(s) announced January 21, 2014

© Lenovo
(70AC-1) January 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AD0000US	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	8x2.5" HS	RAID500 +upgrade	8x900GB 2.5" SAS(RAID50)	N/A	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  * Slim optical bay is not available on 8 x 2.5" models					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Front: Supports the following disk bay configurations: 4 x 3.5"  6 x 2.5"  8 x 2.5"  Rear 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/i350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

* Slim optical bay is not available on 8 x 2.5" models

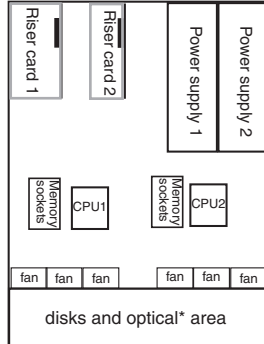
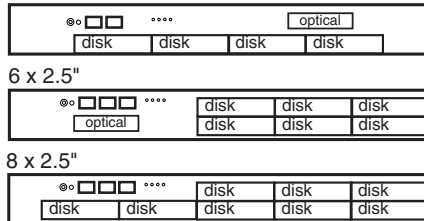
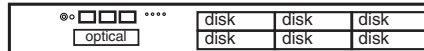
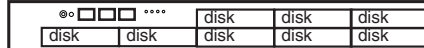
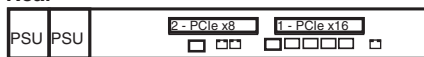
Front/rear Ports:

Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models),
2 USB 2.0
Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45),
1 RJ-45 (dedicate/share mgmt), 1 VGA

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70A90000US	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	2nd	8GBx8 (lockstep) 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x400GB SSD(RAID50)	No	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	1
70A90001UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700	6x1TB 2.5 SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70A90002UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x300GB 2.5 SAS	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

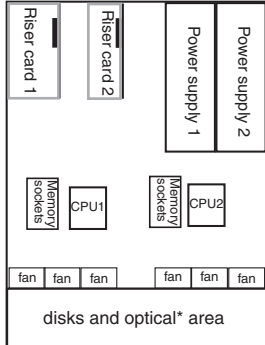
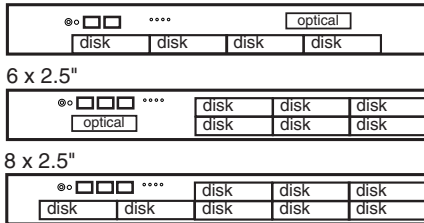
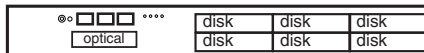
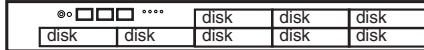
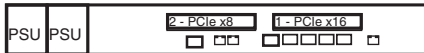
Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  * Slim optical bay is not available on 8 x 2.5" models					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Front: Supports the following disk bay configurations: 4 x 3.5"  6 x 2.5"  8 x 2.5"  Rear 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots: Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCIe 3.0 x16 Slot 2: Low Profile, PCIe 3.0 x8 (x4 elec) Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

See footnotes for more detailed information
Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AA0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X2.5 HS	RAID700	4x300GB 2.5" SAS(RAID6) +4x400GB SSD(RAID5)	N/A	X520SR2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AA0001UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X2.5 HS	RAID700 +CacheVault	6x600GB 2.5 SAS	N/A	X540T2	No	iKVM	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD340 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD340 Optional Configurations sheets](#)

Mechanical	• 1U rack with rail kit • 19" W x 28.9" D x 1.72" H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  * Slim optical bay is not available on 8 x 2.5" models					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": none optical bay, optional external USB optical is needed					Front: Supports the following disk bay configurations: 4 x 3.5"  6 x 2.5"  8 x 2.5"  Rear 					
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant										

* Slim optical bay is not available on 8 x 2.5" models

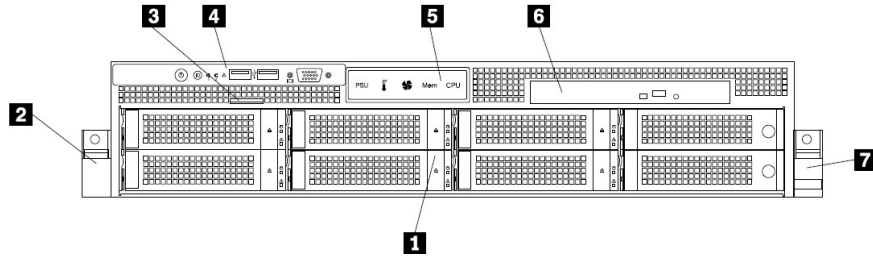
Front/rear Ports:

Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models),
2 USB 2.0
Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45),
1 RJ-45 (dedicate/share mgmt), 1 VGA

ThinkServer RD440 Overview

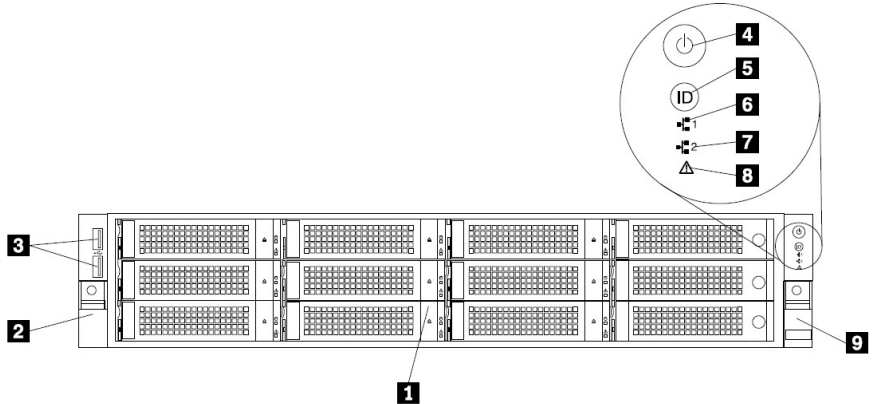
Front view - ThinkServer RD440 supports the following disk bay configurations:

ThinkServer RD440 with 8 x 3.5" Disk Drive Bays



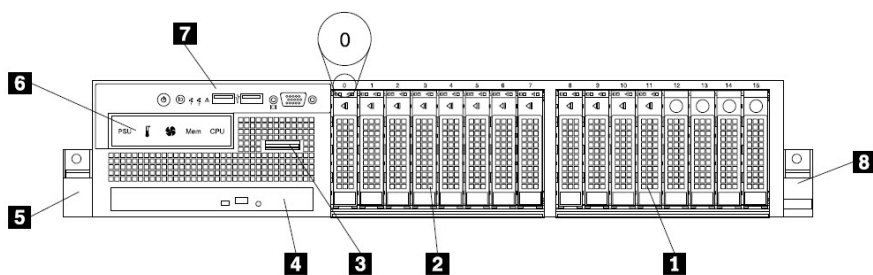
1. 8 x 3.5" hot-swap disk drive bays
2. Rack handle (left)
3. Pull-out information card
4. Front panel
 - Power Button with LED
 - ID button with LED
 - 2 Network interface status LEDs
 - System error LED
 - 2 USB 2.0
 - 1 VGA
5. Intelligent Diagnostics Module (optional)
6. Slim optical drive (optional)
7. Rack handle (right)

ThinkServer RD440 with 12 x 3.5" Disk Drive Bays



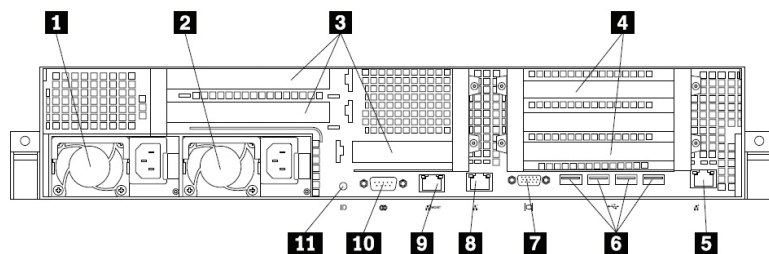
1. 12 x 3.5" hot-swap disk drive bays
2. Rack handle (left)
3. 2 USB 2.0
4. Power Button with LED
5. ID button with LED
6. Network interface status LED 1
7. Network interface status LED 2
8. System error LED
9. Rack handle (right)

ThinkServer RD440 with 2.5" Disk Drive Bays



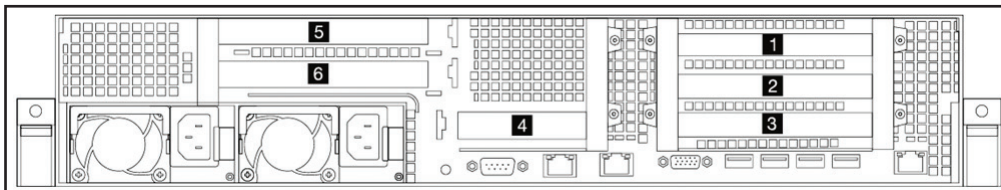
1. 8 x hot-swap disk drive bays (for 16x2.5" hard drive bays model)
2. 8 x Hot-swap disk drive bays
3. Pull-out information card
4. Slim optical drive (optional)
5. Rack handle (left)
6. Intelligent Diagnostics Module (basic or premium, optional)
7. Front panel
 - Power Button with LED
 - ID button with LED
 - 2 Network interface status LEDs
 - System error LED
 - 2 USB 2.0
 - 1 VGA
8. Rack handle (right)

Rear view



1. Hot-swap redundant power supply 2 (optional)
2. Hot-swap redundant power supply 1
3. Three PCI Express slots by riser card 2
4. Two PCI Express slots by riser card 1
5. Ethernet 2 (RJ-45)
6. Four USB 2.0
7. VGA DB-15 connector
8. Ethernet 1 (RJ-45)
9. Dedicate/share management connector (RJ-45)
10. Serial
11. ID LED

ThinkServer RD440 Platform Systems Specifications - I of II

Components	Specifications																									
Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 28 kg (61.73 lb) when fully configured																									
Chipset	Intel C606 Chipset																									
Processors	Two LGA1356 sockets, supports up to two processors from Intel Xeon E5-2400 or Xeon E5-2400 v2 families, up to 8 cores (E5-2400 series)/10 cores (E5-2400 v2 series), one QPI links up to 8.0GT/s, up to 20MB (E5-2400 series)/25MB (E5-2400 v2 series) cache, integrated 3-channel DDR3 memory controller up to 1600MHz																									
Memory type	1600MHz, LV RDIMM*, DDR3, 3-channel per processor, 240-pin <i>* By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting</i>																									
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor																									
Memory capacity	Up to 192GB DDR3 LV RDIMM (16GB x 12)																									
Memory protection	ECC, memory mirroring, memory sparing																									
Disk bays configurations	Supports one of the following configurations: • 8 x 3.5" disk bays + 1 x slim optical bay • 12 x 3.5" disk bays • 8 x 2.5" disk bays + 1 x slim optical bay • 16 x 2.5" disk bays + 1 x slim optical bay																									
RAID support	<table><tr><th>RAID adapter</th><th>RAID support</th><th>Cache</th><th>Transfer rates</th><th>Optional upgrades</th></tr><tr><td>RAID 300** (onboard)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5 support</td></tr><tr><td>RAID 500 (LSI 9240-8i)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5, 50 support</td></tr><tr><td>RAID 700 (LSI 9260-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>512MB</td><td>6Gb/s</td><td>optional intelligent Battery Backup Unit (iBBU08)</td></tr><tr><td>RAID 710 (LSI 9270CV-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>1GB</td><td>6Gb/s</td><td> • optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key </td></tr></table> <i>** RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only</i>	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	RAID 300** (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key
RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades																						
RAID 300** (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support																						
RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support																						
RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)																						
RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key																						
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5" models: one slim optical bay, supports one optional slim optical 12 x 3.5" models: none optical bay, optional external USB optical is needed																									
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management																									
Front ports	One analog VGA DB-15 connector (for 8 x 3.5", 8 x 2.5", and 16 x 2.5" models), two USB 2.0																									
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector																									
Expansion Slots	 Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6 Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) <i>Slot 5-6 are available on dual processors models:</i> Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8																									
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; <i>Maximum resolution: 1920x1200 @60Hz</i>																									

ThinkServer RD440 Platform Systems Specifications - II of II

Components	Specifications		
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) basic or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM basic LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part		
Systems management (iKVM is optional)	- Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions - Front control panel LEDs shows the status of power, ID, network, system - Lenovo SmartGrid Manager - ThinkServer EasyStartup/EasyManage/EasyUpdate		
Security features	Power-on password/administrator password/Trusted Platform Module (TCG 1.2-compliant)		
Cooling fans	5 fans, hot-swap, 4 + 1 redundant		
Cable mgmt (opt)	Optional cable management arm on selected models		
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies		
Hot-swap parts	Disk drives, power supplies, and cooling fans		
Safety, environment, and certifications	Environmental certifications	Energy Star Server 2.0 qualified - RoHS-compliant	
	EMC	FCC Class A, CSA, CE	
	240VA	Supports	
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	
	Temperature - non operating (no package)	-10 °C to 60 °C	
	Temperature - non operating (with package)	-40 °C to 70 °C	
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)	
	Humidity - operating	8%~80%, non-condensing	
	Humidity - non operating (no package)	8%~80%, non-condensing	
	Humidity - non operating (with package)	8%~90%, non-condensing	
	Acoustic noise (idle/working mode)	System Configuration	
		Category	
		Entry level	High-end
		CPU	12
		Memory	4GB x 12
		Optical Drive	None
		Drive Bays	12 x 3.5"
		RAID	RAID500
		HDD	12 x 2TB 3.5" SAS
		PSU	800Wx2
		Sound Pressure (operating)	44.2 dB(A)
		Sound Pressure (idle)	44.7 dB(A)

ThinkServer RD440 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	The following processor options are available:									
	Processor Number	# of Cores	# of Threads	Clock Speed	Processors Specifications*					Part Number
					Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	
	Intel Xeon E5-2400 v2 Series									
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	60W	DDR3-1600	0C19544
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543
	Intel Xeon E5-2600 v2 Series									
	Xeon E5-2450L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89450
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89444
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89445
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443
	Notes: All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/									
Memory options	Memory options								Part Number	
	ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM								0C19533	
	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM								0C19534	
	ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM								0C19535	

ThinkServer RD440 Optional Configurations - Storage and RAID

Disk drive options for 3.5" disk bay models (8 x 3.5"/12 x 3.5")	Hot-swap disk drive options for 3.5" bay		Part Number
	3.5" SATA Hard Drive		
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89473
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89474
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89475
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0A89477
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19520
	3.5" SAS Hard Drive		
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19530
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19531
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive		0C19532
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive		67Y2616
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive		4XB0F28644
	2.5" SSD for 3.5" disk bay		
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit		0C19571
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit		0C19572
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit		0C19573
Disk drive options for 2.5" disk bay models (8 x 2.5"/16 x 2.5")	Hot-swap disk drive options for 2.5" bay		Part Number
	2.5" SATA Hard Drive		
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19495
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive		0C19496
	2.5" SAS Hard Drive		
	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive		67Y2619
	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive		67Y2621
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive		0A89409
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive		0C19494
	2.5" SSD		
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive		0A89420
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive		0A89418
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive		0A89419
RAID options	RAID controller and RAID upgrade options		Part Number
	ThinkServer RAID 300 Upgrade Key for Advanced RAID		0A89422
	ThinkServer RAID 500 Adapter II		0A89464
	ThinkServer RAID 500 Upgrade Key for Advanced RAID		0A89407
	ThinkServer RAID 700 Adapter II		0A89463
	ThinkServer RAID 700 Battery		67Y2647
	ThinkServer RAID 710 Adapter		0C19489
	ThinkServer RAID Super Capacitor Module		0C19490
	ThinkServer RAID FastPath Software Key		0C19491
	ThinkServer RAID CacheCade Pro 2.0 Software Key		0C19492

ThinkServer RD440 Optional Configurations - Network, System Management, Power Supply

Network and HBA options	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by QLogic	0C19482
Security options	Trusted Platform Module options	Part Number
	ThinkServer Trusted Platform Module	0A89428
Systems management options	System Management option for iKVM	Part Number
	ThinkServer Management Module Premium	67Y2624
	Cable Management option	Part Number
	ThinkServer Cable management Arm	0A89476
Power supply options	Power supply option	Part Number
	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

ThinkServer RD440 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer RD440

Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 x86 Edition				
Windows Server 2008 Standard Edition (x86)			•	
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2008 x64 Edition				
Windows Server 2008 Standard Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Datacenter Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 R2 (x64) with SP1				
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business Server 2011				
Windows Small Business Server 2011 Essentials	•		•	
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 2012				
Windows Server 2012 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 Hyper-V	•		•	
Windows Server 2012 R2				
Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V	•		•	
SUSE LINUX Enterprise Server x86				
SUSE LINUX Enterprise Server 10 SP4			•	
SUSE LINUX Enterprise Server 11 SP2	•		•	
SUSE LINUX Enterprise Server 11 SP3	•		•	
SUSE LINUX Enterprise Server x64				
SUSE LINUX Enterprise Server 10 SP4			•	
SUSE LINUX Enterprise Server 11 SP2	•		•	
RedHat Enterprise Linux Server (RHEL) x86				
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
RedHat Enterprise Linux Server x64				
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
VMware x64				
VMware ESXi 5.1 U1	•		•	•
VMware ESXi 5.5	•	•	•	•
Microsoft Hyper V				
Microsoft Hyper-V server 2008	•		•	
Microsoft Hyper-v server 2008 R2 SP1	•		•	
Citrix				
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.0.2	•		•	

Note:

- For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: <http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html>
- For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer_OS_&_Virtualization_Options_Datasheet.pdf

ThinkServer RD440 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD440 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

Upgrade Service Description	Part Number
Warranty	
3YR Onsite 24x7x4 Hour Response	5WS0F15458
3YR Onsite 24x7x8 Hour Response	5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response	5WS0F15430
5YR Onsite NBD	5WS0F15419
Keep Your Drive (KYD) Service	
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456
4YR Onsite NBD + KYD	5PS0F15459
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366
5YR Onsite NBD + KYD	5PS0F15391
Priority Technical Support	
3YR KYD + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0E76471
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + KYD + Priority Support	5PS0F15373
4YR Onsite NBD + Priority Support	5WS0F15401
4YR Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382
5YR Onsite NBD + KYD + Priority Support	5PS0F15388
5YR Onsite NBD + Priority Support	5WS0F15463
5YR Priority Support	5WS0E77173

Upgrade Service Description	Part Number
Post Warranty	
1YR Onsite 24x7x4 Hour Response	5WS0F15435
1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
1YR Onsite 24x7x8 Hour Response	5WS0F15427
1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
1YR Onsite 9x5x4 Hour Response	5WS0F15416
1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
1YR Onsite NBD	5WS0F15407
1YR Onsite NBD + Priority Support	5WS0F15465
TopSeller Priority (TopSeller models only)	
3YR Onsite 24x7x4 Hour Response	5WS0D73789
3YR Onsite 9x5x4 Hour Response	5WS0D73787
4YR Onsite 24x7x4 Hour Response	5WS0D73792
4YR Onsite 9x5x4 Hour Response	5WS0D73791
4YR Onsite NBD	5WS0F15470
3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
3YR Priority Support	5WS0E76457
4YR Priority Support	5WS0E76482

Note:

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer

Service Availability Tool: http://www.lenovo.com/services_warranty/us/en/locator.html

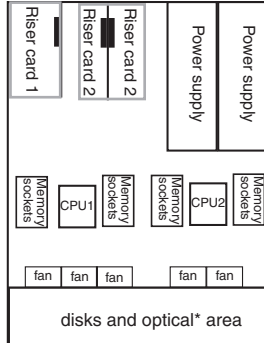
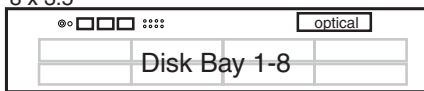
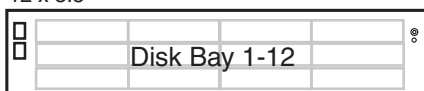
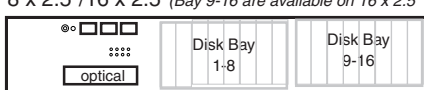
Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use

ThinkServer Service Activation page: <http://www.lenovo.com/activation>

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001QUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001RUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001SUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001TUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001UUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001VUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001WUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  <i>* Slim optical bay is not available on 12 x 3.5" models</i>					
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
<i>**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only</i>						Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5"/Bay 9-16 are available on 16 x 2.5" models)  Rear 					
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed										
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots: Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8					
Cooling fans	5 fans, hot swap, 4 + 1 redundant										

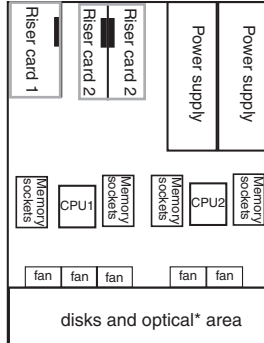
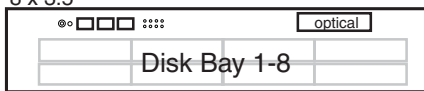
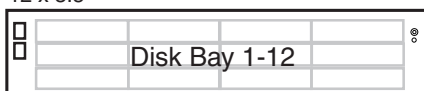
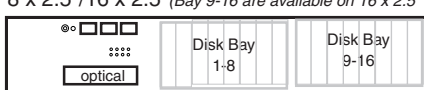
See footnotes for more detailed information

Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001XUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001YUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0020UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0021UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0022UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x2TB 3.5" SAS	DVD±RW	350T2	IDM Premium	iKVM	No	1	TPM	No	3
70AH0023UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID710 +CacheVault	6x4TB 3.5" SATA	DVD±RW	350T4	IDM Premium	iKVM	No	1	TPM	No	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models																												
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies																												
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models																												
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant																												
RAID support	<table><thead><tr><th>RAID adapter</th><th>RAID support</th><th>Cache</th><th>Transfer rates</th><th>Optional upgrades</th></tr></thead><tbody><tr><td>RAID 300* (onboard)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5 support</td></tr><tr><td>RAID 500 (LSI 9240-8i)</td><td>0, 1, 10</td><td></td><td>6Gb/s</td><td>optional upgrade key, add RAID 5, 50 support</td></tr><tr><td>RAID 700 (LSI 9260-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>512MB</td><td>6Gb/s</td><td>optional intelligent Battery Backup Unit (iBBU08)</td></tr><tr><td>RAID 710 (LSI 9270CV-8i)</td><td>0, 1, 10, 5, 50, 6, 60</td><td>1GB</td><td>6Gb/s</td><td> • optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key </td></tr></tbody></table> <i>**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only</i>					RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key	Top  Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5"/Bay 9-16 are available on 16 x 2.5" models  Rear  <i>* Slim optical bay is not available on 12 x 3.5" models</i>				
RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades																															
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RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support																															
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Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed																																		
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management																																		
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2																																		
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part																																		
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate																																		
Cooling fans	5 fans, hot swap, 4 + 1 redundant																																		

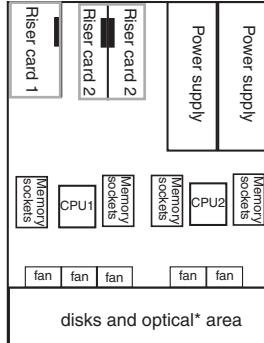
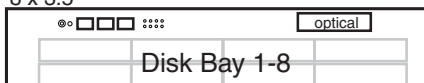
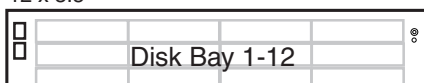
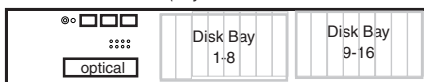
See footnotes for more detailed information

Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AE0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x500GB 3.5" SATA(RAID60)	DVD±RW	X520DA2 +X540T2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top 					
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only						Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)  Rear 					
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed										
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots: Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8					
Cooling fans	5 fans, hot swap, 4 + 1 redundant										

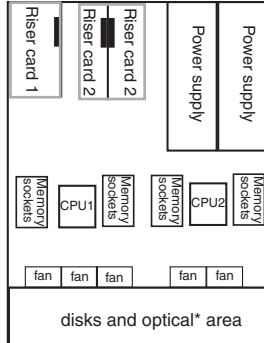
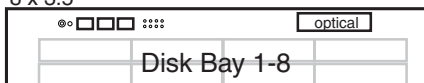
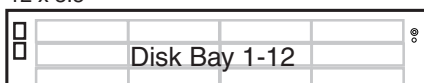
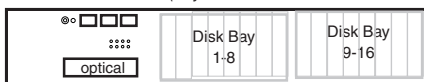
See footnotes for more detailed information

Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AF0000US	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	2nd	16GBx6 1600MHz LVRDIMM	12X3.5" HS	RAID700	6x500GB 3.5" SATA(RAID60) +6x1TB 3.5" SATA(RAID10)	N/A	X520DA2	N/A	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top 					
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only						Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)  Rear 					
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed										
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots: Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8					
Cooling fans	5 fans, hot swap, 4 + 1 redundant										

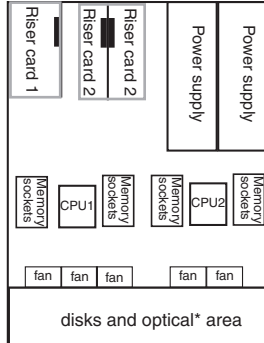
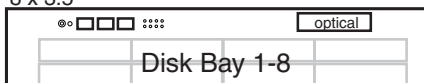
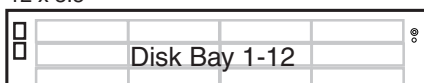
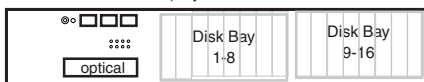
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Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70AG0000US	E5-2440 6C/2.4GHz/15MB/1333MHz	2nd	8GBx6+16GBx6 1600MHz LVRDIMM	8X2.5" HS	RAID500	8x600GB 2.5" SAS(RAID50)	DVD±RW	X540T2 +X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top 					
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only						Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5"/Bay 9-16 are available on 16 x 2.5" models 					
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed										
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management					Rear 					
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part					Expansion Slots: Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8					
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate										
Cooling fans	5 fans, hot swap, 4 + 1 redundant					Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					

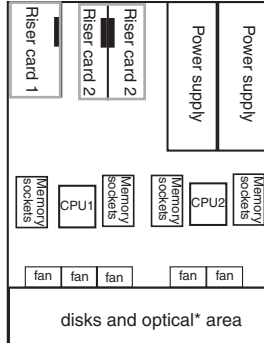
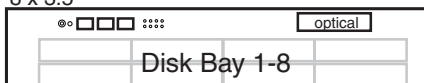
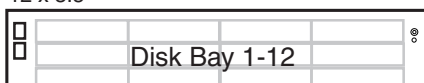
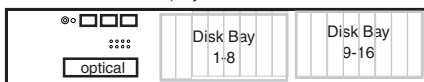
See footnotes for more detailed information

Model(s) announced January 21, 2014

Type-model ¹	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	Remote mgmt	Cable mgmt	PSU qty	TPM module	Preloaded OS	Base warranty (-year, on-site)
70B20000US	Xeon E5-2450L v2 10C/1.7GHz/25MB/1600MHz	2nd	4GBx6+16GBx6 1600MHz LVRDIMM	16X2.5" HS	RAID700 +Battery	12x900GB 2.5" SAS(RAID10) +4x1TB 2.5" SATA(RAID1)	DVD±RW	X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

1. Model in *italics* is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see [ThinkServer RD440 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD340, please see [ThinkServer RD440 Optional Configurations sheets](#)

Mechanical	• 2U rack with rail kit • 19" W x 28.9" D x 3.45" H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured					Cable mgmt (opt)	Optional cable management arm on selected models				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors					Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor					Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory protection	ECC, memory mirroring, memory sparing					Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant				
RAID support	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top  <i>* Slim optical bay is not available on 12 x 3.5" models</i>					
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support						
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support						
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key						
<i>**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only</i>						Front: Supports the following disk bay configurations: 8 x 3.5"  12 x 3.5"  8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)  Rear 					
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5" : none optical bay, external USB optical is needed										
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management										
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2										
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part										
Systems management (iKVM is optional)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots: Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) <i>Slot 5-6 are available on dual processors models:</i> Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8 Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Cooling fans	5 fans, hot swap, 4 + 1 redundant										

See footnotes for more detailed information

Model(s) announced January 21, 2014

ThinkServer RD330 Photography - 3.5" disk bays

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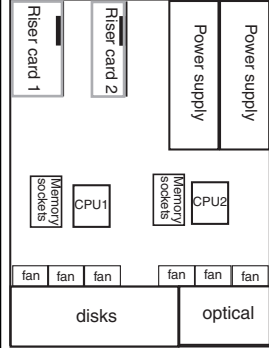
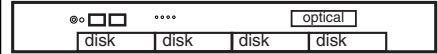
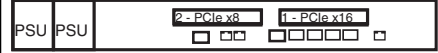
ThinkServer RD330 Photography - 2.5" disk bays

ThinkServer™



ThinkServer RD330 with 3.5" Disk Bay (4304) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
4304-E1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E4U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500	4x1TB 3.5" SATA	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2
4304-E5U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	2
4304-E6U	2xE5-2420	1333MHz RDIMM	2x8GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1
4304-E7U	1xE5-2420	1333MHz RDIMM	1x16GB	No	500		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	2
4304-E8U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1
Limited warranty	3-year parts and labor; more services information see S-RAL sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Two LGA1356 sockets														
Implementation	Two LGA1356 sockets														
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200 @60Hz														
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter														
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card	Two USB 2.0														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports															
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Six fans, non-hot swap														
							1U Rack top 								
							Front 								
							Rear 								
							Mechanical 1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured								
							Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk								
							Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)								
							Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)								
							Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage								
							Energy Management Technology Lenovo® SmartGrid Manager								
							ENERGY STAR® Server 1.1-compliant RoHS-compliant								
							For more accessories, see O-RAL sheet								

ThinkServer RD330 with 3.5" Disk Bay (4304) - TopSeller (June 2013)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	System TPM	Cable mgmt	mgmt OS	Preload OS	PSU qty
4304-F5U	1xE5-2407	1600MHz RDIMM	1x8GB	No	300	2x1TB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1

Limited warranty	3-year parts and labor; more services information see S-RAL sheet													
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz)													
Implementation	Two LGA1356 sockets													
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)													
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported													
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz													
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)													
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700													
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter													
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm													
Tape drive	None													
Optical	DVD±RW or DVD ROM, slim													
Diskette	None (use USB port)													
Chipset	Intel C606 Chipset													
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2													
Riser card	Two USB 2.0													
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector													
Rear ports														
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category													
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions													
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant													
Prerequisites	SATA/SAS disk, OS													
Keyboard/mouse	None (use USB port)													
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies													
Rack kit	Includes rack kit													
Cable management	Optional cable management arm on selected models													
Cooling	Six fans, non-hot swap													

Riser card 1

Riser card 2

Power supply

Power supply

Memory sockets

CPU1

Memory sockets

CPU2

fan

fan

fan

fan

fan

fan

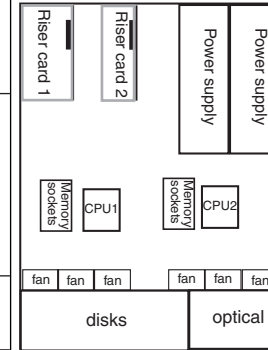
disks

optical

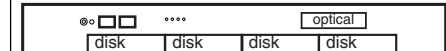
Front

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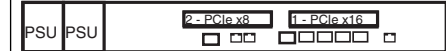
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1	5.25", 0.5" high, external, for optical
Bay 2-5	3.5", 1" high, external, for disk

Expansion Slots

Slot 1:	half-length, full-height, PCI Express 3.0 x16
Slot 2:	Low Profile, PCI Express 3.0 x8 (x4 elec)

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD330 with 3.5" Disk Bay (4305)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
4305-B1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4305-B2U	1xE5-2403	1333MHz RDIMM	1x8GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4305-B3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4305-B4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1
4305-B5U	1xE5-2450	1333MHz RDIMM	1x16GB	No	500+Upgrade	No	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2

Limited warranty	3-year parts and labor; more warranty information see S-RAL sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)														
Implementation	Two LGA1356 sockets														
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200 @60Hz														
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter														
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card	Two USB 2.0														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports															
Intelligent Diagnostics Module (IDM)	Supports IDM on selected model; Basic: IDM LED lights indicate failing component category														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Cable: contains cable management arm														
Cooling	Six fans, non-hot swap														

1U Rack top

Front

Rear

Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1	5.25"	0.5" high,	external,	for optical
Bay 2-5	3.5"	1" high,	external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant

RoHS-compliant

For more accessories, see O-RAL sheet

Product Specifications Reference (PSREF)

See footnotes for important warranty information
US model(s) announced September 11, 2012

Product Specifications Reference (PSREF)

See footnotes for important warranty information
US model(s) announced August 14, 2012

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ThinkServer RD330 with 2.5" Disk Bay (3074)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3074-D1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	No	TPM	IPMI	No	No	1
3074-D2U	1xE5-2403	1333MHz RDIMM	1x8GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	No	TPM	IPMI	No	No	1
3074-D3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	No	TPM	IPMI	No	No	2
3074-D4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	6xHS	SATA/SAS DVD±RW	No	No	TPM	iKVM	No	No	1
3074-D5U	1xE5-2450	1333MHz RDIMM	1x16GB	No	500+Upgrade	None	6xHS	SATA/SAS DVD±RW	No	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Two LGA1356 sockets														
Implementation															
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Six 2.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 300:</i> Additional upgrade key for RAID 300, add RAID 5 support <i>RAID 500:</i> ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support <i>RAID 700:</i> ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50 support <i>Battery for 700:</i> Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card	One analog VGA DB-15 connector, two USB 2.0														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports															
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; <i>Basic:</i> IDM LED lights indicate failing component category														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>iKVM:</i> add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; <i>TPM:</i> additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Six fans, non-hot swap														

1U Rack top

Front

Rear

Mechanical				
1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured				
Disk Bays				
Bay 1	5.25",	0.5" high, external,	for optical	
Bay 2-7	2.5",	0.6" high, external,	for disk	
Expansion Slots				
Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)				
Security				
- Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)				
Software Management Tools				
- ThinkServer EasyStartup - ThinkServer EasyManage				
Energy Management Technology				
Lenovo® SmartGrid Manager				
ENERGY STAR® Server 1.1-compliant				
RoHS-compliant				
For more accessories, see O-RAL sheet				

ThinkServer RD330 with 2.5" Disk Bay (3074) - September 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3074-D6U	1xE5-2407	1600MHz RDIMM	1x4GB	No	300		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
3074-D7U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2
3074-D8U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Two LGA1356 sockets														
Implementation															
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Six 2.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card															
Front ports	One analog VGA DB-15 connector, two USB 2.0														
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Six fans, non-hot swap														

1U Rack top

Front

Rear

Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1	5.25", 0.5" high, external,	for optical
Bay 2-7	2.5", 0.6" high, external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant

RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 Photography - Eight 3.5" disk bays

ThinkServer™



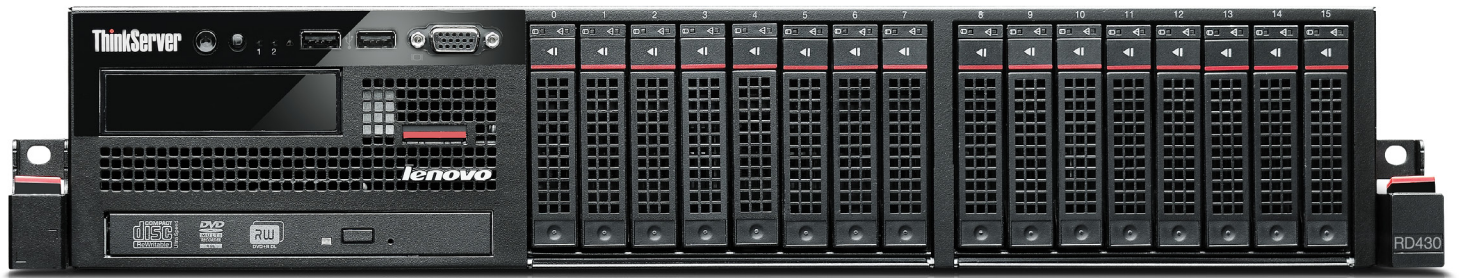
ThinkServer RD430 Photography - Twelve 3.5" disk bays

ThinkServer



ThinkServer RD430 Photography - 2.5" disk bays

ThinkServer™

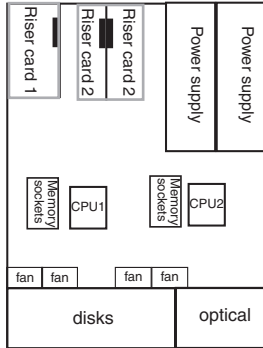


* Some models in pictures above contain optional add-in ethernet adapter or RAID adapter;
some RD430 with 2.5" disk bay models may come with 8 disk bays

ThinkServer RD430 with eight 3.5" Disk Bays (3064) - TopSeller

Product Specifications Reference (PSREF)

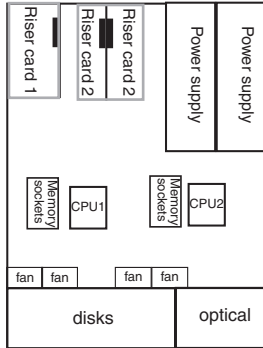
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3064-G2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G3U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G4U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3064-G5U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3064-G6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet		2U Rack top	
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Two LGA1356 sockets			
Implementation			Front 	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)		Rear 	
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported		Slot 4, 5 are available on dual processors models only	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz			
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays (see right)			
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700			
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter			
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm			
Tape drive	None			
Optical	DVD±RW or DVD ROM, slim			
Diskette	None (use USB port)			
Chipset	Intel C606 Chipset			
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5			
Riser card	One analog VGA DB-15 connector, two USB 2.0			
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector			
Rear ports				
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part			
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions			
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant			
Prerequisites	SATA/SAS disk, OS			
Keyboard/mouse	None (use USB port)			
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies			
Rack kit	Includes rack kit			
Cable management	Optional cable management arm on selected models			
Cooling	Four fans, hot-swap			
			Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured	
			Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk	
			Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8	
			Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)	
			Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage	
			Energy Management Technology Lenovo® SmartGrid Manager	
			ENERGY STAR® Server 1.1-compliant RoHS-compliant	
			For more accessories, see O-RAL sheet	

ThinkServer RD430 with eight 3.5" Disk Bays (3065)

Product Specifications Reference (PSREF)

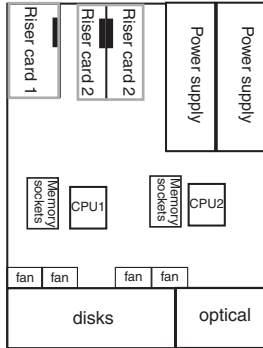
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-B1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B4U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B5U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet		2U Rack top	
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Two LGA1356 sockets			
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)			
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported			
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz		Slot 4, 5 are available on dual processors models only	
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays (see right)			
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700			
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter			
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm			
Tape drive	None			
Optical	DVD±RW or DVD ROM, slim			
Diskette	None (use USB port)			
Chipset	Intel C606 Chipset			
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5			
Riser card	One analog VGA DB-15 connector, two USB 2.0			
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector			
Rear ports				
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part			
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions			
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant			
Prerequisites	SATA/SAS disk, OS			
Keyboard/mouse	None (use USB port)			
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies			
Rack kit	Includes rack kit			
Cable management	Optional cable management arm on selected models			
Cooling	Four fans, hot-swap			
			Mechanical	
			2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured	
			Disk Bays	
			Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk	
			Expansion Slots	
			Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8	
			Security	
			- Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)	
			Software Management Tools	
			- ThinkServer EasyStartup - ThinkServer EasyManage	
			Energy Management Technology	
			Lenovo® SmartGrid Manager	
			ENERGY STAR® Server 1.1-compliant RoHS-compliant	
			For more accessories, see O-RAL sheet	

ThinkServer RD430 with eight 3.5" Disk Bays (3065) - September 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-A3U	1xE5-2420	1600MHz RDIMM	1x8GB	No	300		SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3065-A4U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-A5U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet			2U Rack top		
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)					
Implementation	Two LGA1356 sockets					
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)					
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported					
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz			Front		
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays (see right)					
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700			Rear		
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter					
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm			Slot 4, 5 are available on dual processors models only		
Tape drive	None					
Optical	DVD±RW or DVD ROM, slim					
Diskette	None (use USB port)					
Chipset	Intel C606 Chipset					
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5					
Riser card	One analog VGA DB-15 connector, two USB 2.0					
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector					
Rear ports						
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part					
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions					
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant					
Prerequisites	SATA/SAS disk, OS					
Keyboard/mouse	None (use USB port)					
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					
Rack kit	Includes rack kit					
Cable management	Optional cable management arm on selected models					
Cooling	Four fans, hot-swap					
				Mechanical		
				2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured		
				Disk Bays		
				Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk		
				Expansion Slots		
				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8		
				Security		
				- Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)		
				Software Management Tools		
				- ThinkServer EasyStartup - ThinkServer EasyManage		
				Energy Management Technology		
				Lenovo® SmartGrid Manager		
				ENERGY STAR® Server 1.1-compliant RoHS-compliant		
				For more accessories, see O-RAL sheet		

ThinkServer RD430 with eight 3.5" Disk Bays (3065) - October 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-K1U	1xE5-2450	1600MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty	3-year parts and labor; more services information see S-RD sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)														
Implementation	Two LGA1356 sockets														
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management														
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Front ports	One analog VGA DB-15 connector, two USB 2.0														
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Four fans, hot-swap														

2U Rack top

Front

Rear

Slot 4, 5 are available on dual processors models only

Mechanical		2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Disk Bays		Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Expansion Slots		Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Security		- Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)
Software Management Tools		- ThinkServer EasyStartup - ThinkServer EasyManage
Energy Management Technology		Lenovo® SmartGrid Manager
ENERGY STAR® Server 1.1-compliant		RoHS-compliant
		For more accessories, see O-RAL sheet

ThinkServer RD430 with twelve 3.5" Disk Bays (3057) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3057-E1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E5U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	6x1TB 3.5" SATA	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more services information see S-RAL sheet

Processor
Up to two Intel® Xeon® E5-2400 series processors,
Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1),
3-channel DDR3 memory controller (up to 1066MHz)
Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1),
3-channel DDR3 memory controller (up to 1066MHz)
Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1),
Turbo Boost 2.0 (up to 2.4GHz),
3-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1),
Turbo Boost 2.0 (up to 2.9GHz),
3-channel DDR3 memory controller (up to 1600MHz)
Implementation
Two LGA1356 sockets

Memory
UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,
240-pin, 12 DIMM sockets (6 sockets per processor);
192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over six DIMMs requires dual processors
- Mixing of UDIMM, RDIMM, or LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor,
one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Twelve 3.5" hot-swap SATA/SAS disk bays (see right)
Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i),
PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,
RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter,
add RAID 5, 50 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i),
PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,
RAID 0, 1, 5, 6, 10, 50, 60 support
Battery for 700: Intelligent Battery Backup Unit (IBBU08) for RAID 700
RAID Support
Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s)
3.5" SATA: SATA 6.0Gb/s, 7200 rpm
3.5" SAS: SAS 6.0Gb/s, 15000 rpm

Tape drive
None
Optical
None (use USB port)
Diskette
None (use USB port)

Chipset
Intel C606 Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350,
one Gigabit Ethernet port by Intel 82574L, dedicate/share management
(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5

Riser card
Two USB 2.0
Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),
Rear ports
one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector

Intelligent Diagnostics Module (IDM)
None

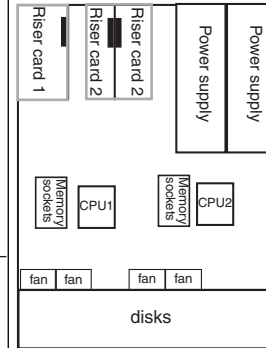
Systems mgmt
Onboard Aspeed AST2300 graphics/management processor,
IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM
functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

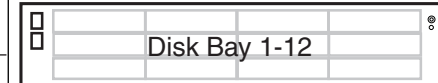
Prerequisites
SATA/SAS disk, OS
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap,
80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Optional cable management arm on selected models
Cooling
Four fans, hot-swap

2U Rack top



Front



Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

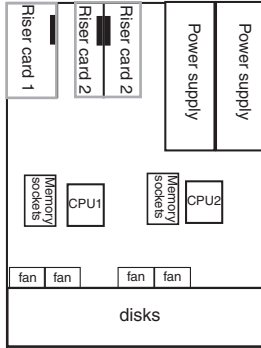
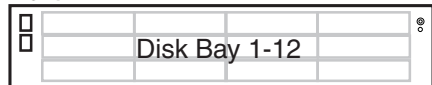
ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with twelve 3.5" Disk Bays (3059)

Product Specifications Reference (PSREF)

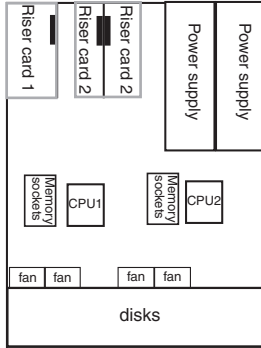
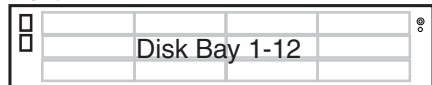
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-F1U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iPMI	No	No	1
3059-F2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	iPMI	No	No	1
3059-F3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3059-F4U	2xE5-2450	1333MHz RDIMM	2x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more warranty information see S-RAL sheet			2U Rack top  Front  Rear  Slot 4, 5 are available on dual processors models only Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1-12 3.5", 1" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage Energy Management Technology • Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet		
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)					
Implementation	Two LGA1356 sockets					
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)					
Additional memory disclaimers	• Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over six DIMMs requires dual processors • Mixing of UDIMM, RDIMM, or LV RDIMM is not supported					
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz					
Disk bays	Twelve 3.5" hot-swap SATA/SAS disk bays (see right)					
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Battery for 700:</i> Intelligent Battery Backup Unit (iBBU08) for RAID 700					
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter					
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm					
Tape drive	None					
Optical	None (use USB port)					
Diskette	None (use USB port)					
Chipset	Intel C606 Chipset					
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5					
Riser card	Two USB 2.0					
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector					
Rear ports						
Intelligent Diagnostics Module (IDM)	None					
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>iKVM:</i> add-on ThinkServer Management Module Premium for iKVM functions					
Security chip	No onboard TPM chip; <i>TPM:</i> additional add-on card for TPM function, TCG 1.2-compliant					
Prerequisites	SATA/SAS disk, OS					
Keyboard/mouse	None (use USB port)					
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					
Rack kit	Includes rack kit					
Cable management	Optional cable management arm on selected models					
Cooling	Four fans, hot-swap					

ThinkServer RD430 with twelve 3.5" Disk Bays (3059) - Sep 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk type	SATA optical	Intelligent Diagnostics	System TPM	Cable mgmt	Preload OS	PSU qty
3059-F6U	1xE5-2420	1600MHz RDIMM	1x8GB	No	700		SATA/SAS	No	No	TPM	iKVM	No	1
3059-F8U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	No	No	TPM	iKVM	No	2
3059-F9U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	No	No	TPM	iKVM	No	2

Limited warranty	3-year parts and labor; more warranty information see S-RAL sheet			2U Rack top  Front  Rear  Slot 4, 5 are available on dual processors models only Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1-12 3.5", 1" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all) Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage Energy Management Technology - Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet		
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1) , 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1) , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)					
Implementation	Two LGA1356 sockets					
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)					
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported					
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz					
Disk bays	Twelve 3.5" hot-swap SATA/SAS disk bays (see right)					
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Battery for 700:</i> Intelligent Battery Backup Unit (iBBU08) for RAID 700					
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter					
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm					
Tape drive	None					
Optical	None (use USB port)					
Diskette	None (use USB port)					
Chipset	Intel C606 Chipset					
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5					
Riser card	Two USB 2.0					
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector					
Rear ports						
Intelligent Diagnostics Module (IDM)	None					
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>iKVM:</i> add-on ThinkServer Management Module Premium for iKVM functions					
Security chip	No onboard TPM chip; <i>TPM:</i> additional add-on card for TPM function, TCG 1.2-compliant					
Prerequisites	SATA/SAS disk, OS					
Keyboard/mouse	None (use USB port)					
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					
Rack kit	Includes rack kit					
Cable management	Optional cable management arm on selected models					
Cooling	Four fans, hot-swap					

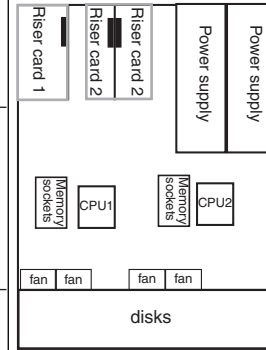
ThinkServer RD430 with twelve 3.5" Disk Bays (3059) - October 2012

Product Specifications Reference (PSREF)

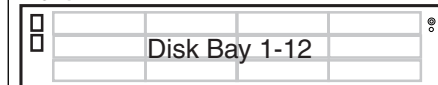
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-K5U	1xE5-2450	1600MHz RDIMM	1x8GB	No	700	No	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	1

Limited warranty	3-year parts and labor; more warranty information see S-RD sheet														
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)														
Implementation	Two LGA1356 sockets														
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Twelve 3.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm														
Tape drive	None														
Optical	None (use USB port)														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management														
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Front ports	Two USB 2.0														
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Intelligent Diagnostics Module (IDM)	None														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Four fans, hot-swap														

2U Rack top



Front



Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
 Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
 Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

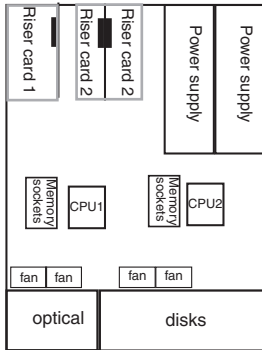
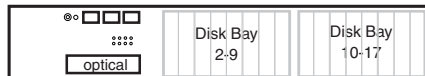
ENERGY STAR® Server 1.1-compliant
 RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with 2.5" Disk Bay (3070) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3070-C1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300		8xHS	SATA/SAS DVD±RW	Basic	TPM	IPMI	No	No	No	1
3070-C2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300		8xHS	SATA/SAS DVD±RW	Basic	TPM	IPMI	No	No	No	1
3070-C3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		8xHS	SATA/SAS DVD±RW	Premium	TPM	IPMI	No	No	No	1
3070-C4U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery		8xHS	SATA/SAS DVD±RW	Premium	TPM	iKVM	No	No	No	2
3070-C5U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		16xHS	SATA/SAS DVD±RW	Premium	TPM	iKVM	No	No	No	1
3070-C6U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery		16xHS	SATA/SAS DVD±RW	Premium	TPM	iKVM	No	No	No	2
3070-C7U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	6x300GB 2.5" SAS	16xHS	SATA/SAS DVD±RW	Premium	TPM	iKVM	No	No	No	2
3070-C8U	1xE5-2450	1333MHz RDIMM	1x8GB	No	300		8xHS	SATA/SAS DVD±RW	Premium	TPM	IPMI	No	No	No	1
3070-C9U	1xE5-2450	1333MHz RDIMM	1x8GB	No	700+Battery		8xHS	SATA/SAS DVD±RW	Premium	TPM	iKVM	No	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet					2U Rack top									
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)														
Implementation	Two LGA1356 sockets					Front 									
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)					Bay 10-17 are available on sixteen disk bays models only									
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported					Rear 									
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz					Slot 4, 5 are available on dual processors models only									
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right)														
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C606 Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Riser card	One analog VGA DB-15 connector, two USB 2.0														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports															
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Four fans, hot-swap														
						Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured									
						Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk									
						Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8									
						Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)									
						Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage									
						Energy Management Technology Lenovo® SmartGrid Manager									
						ENERGY STAR® Server 1.1-compliant RoHS-compliant									
						For more accessories, see O-RAL sheet									

Product Specifications Reference (PSREF)

Limited warranty	3-year parts and labor; more services information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1333MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires dual processors - Mixing of UDIMM, RDIMM, or LV RDIMM is not supported
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right)
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"
Tape drive	None
Optical	DVD±RW or DVD ROM, slim
Diskette	None (use USB port)
Chipset	Intel C606 Chipset
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Riser card	One analog VGA DB-15 connector, two USB 2.0
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Rear ports	
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

2U Rack top

Front

Bay 10-17 are available on sixteen disk bays models only

Rear

Slot 4, 5 are available on dual processors models only

Mechanical	
2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured	
Disk Bays	
Bay 1	5.25", 0.5" high, external, for optical
Bay 2-9	2.5", 0.6" high, external, for disk
Bay 10-17 are available on sixteen 2.5" disk bays model:	
Bay 10-17	2.5", 0.6" high, external, for disk
Expansion Slots	
Slot 1: half-length, full-height, PCI Express 3.0 x16	
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)	
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)	
Slot 4-5 are available on dual processors models:	
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)	
Slot 5: half-length, full-height, PCI Express 3.0 x8	
Security	
- Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)	
Software Management Tools	
- ThinkServer EasyStartup - ThinkServer EasyManage	
Energy Management Technology	
Lenovo® SmartGrid Manager	
ENERGY STAR® Server 1.1-compliant RoHS-compliant	
For more accessories, see O-RAL sheet	

ThinkServer RD430 with 2.5" Disk Bay (3071) - October 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3071-K4U	1xE5-2450	1600MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty **3-year** parts and labor; more services information see S-RD sheet

Processor Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)

Implementation Two LGA1356 sockets

Memory UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over six DIMMs requires dual processors
- Mixing of UDIMM, RDIMM, or LV RDIMM is not supported

Graphics Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz

Disk bays Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right)

Disk controller

RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support

Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support

RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support

Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support

RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support

Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700

RAID Support Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s) 2.5" SAS: SAS 6.0Gb/s, 10000 rpm
SSD: Solid State Drive, 2.5"

Tape drive None
Optical DVD±RW or DVD ROM, slim
Diskette None (use USB port)

Chipset Intel C606 Chipset

Ethernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5

Riser card One analog VGA DB-15 connector, two USB 2.0

Front ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector

Rear ports

Intelligent Diagnostics Module (IDM) Supports IDM or IDM Premium on selected models;
Basic: IDM LED lights indicate failing component category
Premium: IDM Premium LED lights indicate individual failing part

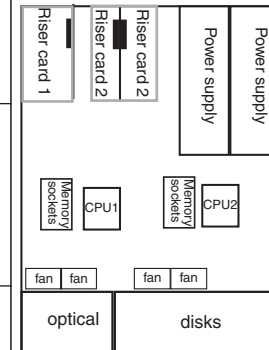
Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions

Security chip No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

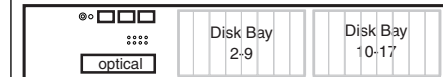
Prerequisites SATA/SAS disk, OS
Keyboard/mouse None (use USB port)
Power supply One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit Includes rack kit
Cable management Optional cable management arm on selected models
Cooling Four fans, hot-swap

2U Rack top

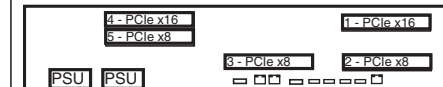


Front



Bay 10-17 are available on sixteen disk bays models only

Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-9 2.5", 0.6" high, external, for disk
Bay 10-17 are available on sixteen 2.5" disk bays model:
Bay 10-17 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

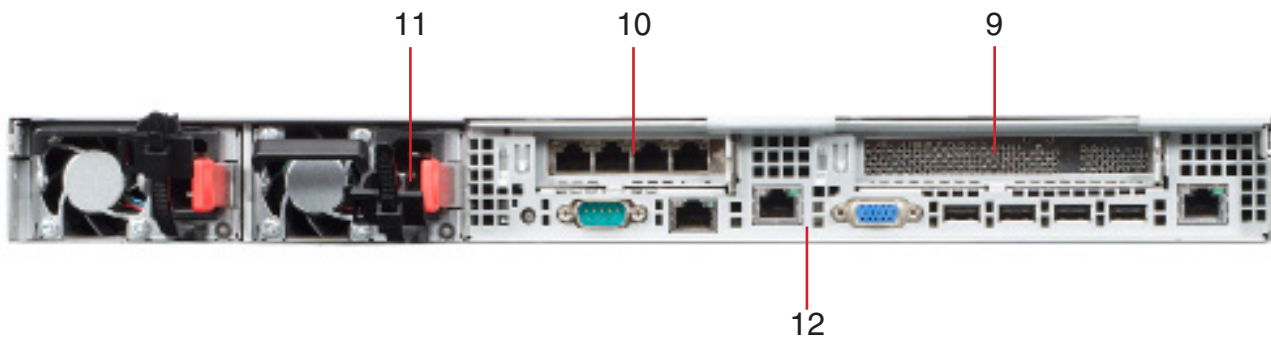
ThinkServer RD540 Overview - Front and Rear



ThinkServer RD540 with 4x3.5" Disk Drive Bays



ThinkServer RD540 with 8x2.5" Disk Drive Bays



Front View

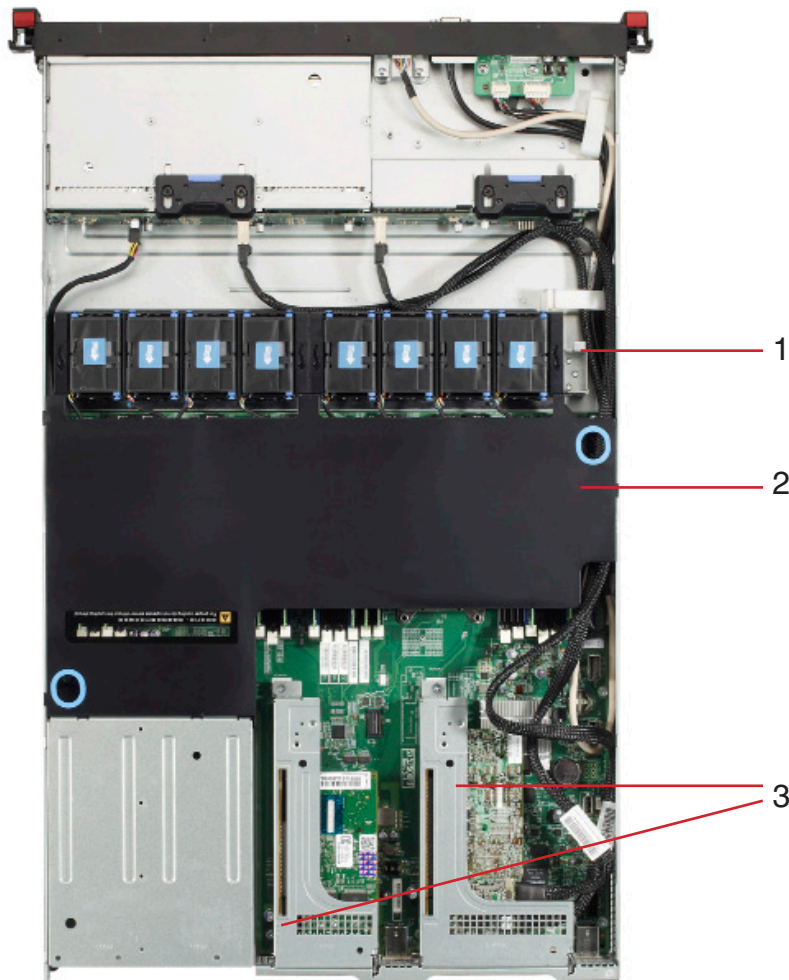
1. Hot-swap disk drive bays
2. Power Button with LED
3. ID button with LED
4. 2 Network interface status LEDs
5. 2 USB 2.0
6. Intelligent Diagnostics Module (optional)
7. Optical (optional, for 3.5" disk drive bay model)
8. VGA (for 2.5" disk drive bay model)

Rear View

9. PCI Express slots 1*
10. PCI Express slots 2*
11. Hot-swap power supplies
12. Rear ports:
 - 4 USB 2.0
 - 1 serial
 - 2 ethernet
 - 1 RJ-45 (dedicate/share mgmt)
 - 1 VGA

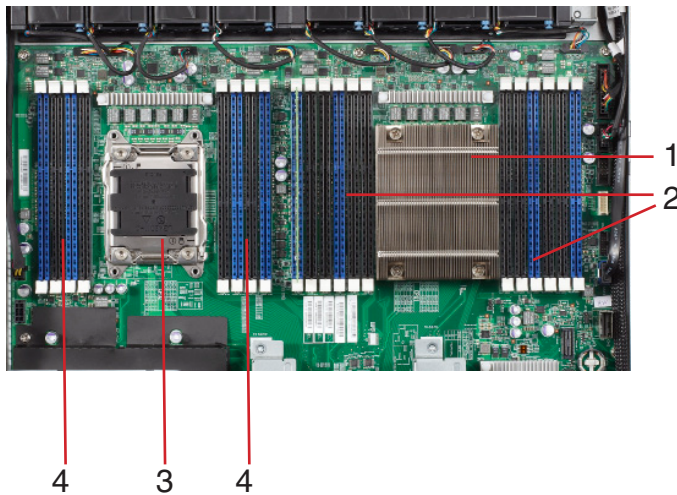
*Adapters are optional

ThinkServer RD540 Overview - Internal



Internal View

1. Non-hot swap cooling fans
2. Processors and memory DIMM sockets (under cooling shroud, see below)
3. PCI Express slots (*Adapters are optional)



Processors and Memory DIMM Sockets (under cooling shroud)

1. CPU 1
2. 12 Memory DIMM sockets for CPU 1
3. CPU 2 (optional)
4. 8 Memory DIMM sockets for CPU 2 (for dual processors model)

ThinkServer RD540 Platform Specifications

Components	Specifications			
Chipset	Intel C602J Chipset			
Mechanical	• 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured			
Front ports	Two USB 2.0, one analog VGA DB-15 connector (for 8x2.5" disk bays models)			
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector			
Expansion Slots	PSU PSU 2 - PCIe x8 1 - PCIe x16 Two PCI-Express slots via two riser cards, riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8			
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front (for 8x2.5" disk bays models), one VGA DB-15 on rear; <i>Maximum resolution: 1920x1200@60Hz</i>			
Hot-swap parts	Disk drives, power supplies			
Safety, environment, and certifications	Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant		
	EMC	FCC Class A, CSA CE		
	240VA	Supports		
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)		
	Temperature - non operating (no package)	-10 °C to 60 °C		
	Temperature - non operating (with package)	-40 °C to 70 °C		
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)		
	Humidity - operating	8%~80%, non-condensing		
	Humidity - non operating (no package)	8%~80%, non-condensing		
	Humidity - non operating (with package)	8%~90%, non-condensing		
	Acoustic noise (idle/working mode)	Category	Normal Configuration	High Performance Configuration
		CPU	1	2
		HDD	2x 900GB 2.5" SAS 6Gb/s	8x 900GB 2.5" SAS 6Gb/s
		Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM
		PCIe adapters	I350	I350
PSU		1x 800W	2x 800W	
RAID		RAID 700 adapter	RAID 700 adapter	
Sound Pressure (operating)		38.6 dB(A)	38.7 dB(A)	
Sound Pressure (idle)	39.0 dB(A)	40.0 dB(A)		

ThinkServer RD540 Optional Configurations - Processor and Memory

Rack kit	Included in models																																																																																																																																																																																																																																																																																																																																								
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 or Xeon E5-2600 v2 families, up to 8 cores (E5-2600 series)/12 cores (E5-2600 v2 series), two QPI links up to 8.0GT/s each, up to 20MB (E5-2600 series)/30MB (E5-2600 v2 series) cache, integrated 4-channel DDR3 memory controller up to 1600MHz (E5-2600 series)/1866MHz (E5-2600 v2 series). The following processor options are available: <table><tr><th rowspan="2">Processor Number</th><th colspan="8">Processors Specifications*</th><th rowspan="2">Part Number</th></tr><tr><th># of Cores</th><th># of Threads</th><th>Clock Speed</th><th>Max Turbo Frequency</th><th>Cache</th><th>QPI Speed</th><th>Max TDP</th><th>Memory Speed</th></tr><tr><td colspan="10">Intel Xeon E5-2600 Series</td></tr><tr><td>Xeon E5-2680</td><td>8</td><td>16</td><td>2.7 GHz</td><td>3.5 GHz</td><td>20MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89430</td></tr><tr><td>Xeon E5-2670</td><td>8</td><td>16</td><td>2.6 GHz</td><td>3.3 GHz</td><td>20MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1600</td><td>0A89431</td></tr><tr><td>Xeon E5-2667</td><td>6</td><td>12</td><td>2.9 GHz</td><td>3.5 GHz</td><td>15MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89435</td></tr><tr><td>Xeon E5-2665</td><td>8</td><td>16</td><td>2.4 GHz</td><td>3.1 GHz</td><td>20MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1600</td><td>0A89432</td></tr><tr><td>Xeon E5-2660</td><td>8</td><td>16</td><td>2.2 GHz</td><td>3 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0A89462</td></tr><tr><td>Xeon E5-2650L</td><td>8</td><td>16</td><td>1.8 GHz</td><td>2.3 GHz</td><td>20MB</td><td>8 GT/s</td><td>70 W</td><td>DDR3-1600</td><td>0A89434</td></tr><tr><td>Xeon E5-2650</td><td>8</td><td>16</td><td>2 GHz</td><td>2.8 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0A89433</td></tr><tr><td>Xeon E5-2643</td><td>4</td><td>8</td><td>3.3 GHz</td><td>3.5 GHz</td><td>10MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89440</td></tr><tr><td>Xeon E5-2640</td><td>6</td><td>12</td><td>2.5 GHz</td><td>3 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89436</td></tr><tr><td>Xeon E5-2630L</td><td>6</td><td>12</td><td>2 GHz</td><td>2.5 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>60 W</td><td>DDR3-1333</td><td>0A89439</td></tr><tr><td>Xeon E5-2630</td><td>6</td><td>12</td><td>2.3 GHz</td><td>2.8 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89437</td></tr><tr><td>Xeon E5-2620</td><td>6</td><td>12</td><td>2 GHz</td><td>2.5 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89438</td></tr><tr><td>Xeon E5-2609</td><td>4</td><td>4</td><td>2.4 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1066</td><td>0A89441</td></tr><tr><td>Xeon E5-2603</td><td>4</td><td>4</td><td>1.8 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1066</td><td>0A89442</td></tr><tr><td colspan="10">Intel Xeon E5-2600 v2 Series</td></tr><tr><td>Xeon E5-2697 v2</td><td>12</td><td>24</td><td>2.7 GHz</td><td>3.5 GHz</td><td>30MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19546</td></tr><tr><td>Xeon E5-2695 v2</td><td>12</td><td>24</td><td>2.4 GHz</td><td>3.2 GHz</td><td>30MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19547</td></tr><tr><td>Xeon E5-2690 v2</td><td>10</td><td>20</td><td>3 GHz</td><td>3.6 GHz</td><td>25MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19548</td></tr><tr><td>Xeon E5-2680 v2</td><td>10</td><td>20</td><td>2.8 GHz</td><td>3.6 GHz</td><td>25MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19549</td></tr><tr><td>Xeon E5-2670 v2</td><td>10</td><td>20</td><td>2.5 GHz</td><td>3.3 GHz</td><td>25MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19550</td></tr><tr><td>Xeon E5-2667 v2</td><td>8</td><td>16</td><td>3.3 GHz</td><td>4 GHz</td><td>25MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19553</td></tr><tr><td>Xeon E5-2660 v2</td><td>10</td><td>20</td><td>2.2 GHz</td><td>3 GHz</td><td>25MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1866</td><td>0C19551</td></tr><tr><td>Xeon E5-2650 v2</td><td>8</td><td>16</td><td>2.6 GHz</td><td>3.4 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1866</td><td>0C19552</td></tr><tr><td>Xeon E5-2650L v2</td><td>10</td><td>20</td><td>1.7 GHz</td><td>2.1 GHz</td><td>25MB</td><td>7.2 GT/s</td><td>70 W</td><td>DDR3-1600</td><td>0C19554</td></tr><tr><td>Xeon E5-2640 v2</td><td>8</td><td>16</td><td>2 GHz</td><td>2.5 GHz</td><td>20MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0C19555</td></tr><tr><td>Xeon E5-2630 v2</td><td>6</td><td>12</td><td>2.6 GHz</td><td>3.1 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>80 W</td><td>DDR3-1600</td><td>0C19558</td></tr><tr><td>Xeon E5-2630L v2</td><td>6</td><td>12</td><td>2.4 GHz</td><td>2.8 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>60 W</td><td>DDR3-1600</td><td>0C19556</td></tr><tr><td>Xeon E5-2620 v2</td><td>6</td><td>12</td><td>2.1 GHz</td><td>2.6 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>80 W</td><td>DDR3-1600</td><td>0C19557</td></tr><tr><td>Xeon E5-2609 v2</td><td>4</td><td>4</td><td>2.5 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1333</td><td>0C19559</td></tr><tr><td>Xeon E5-2603 v2</td><td>4</td><td>4</td><td>1.8 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1333</td><td>0C19560</td></tr></table> <i>Notes:</i> All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided “as-is”. Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/	Processor Number	Processors Specifications*								Part Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Intel Xeon E5-2600 Series										Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0A89430	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89431	Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB	8 GT/s	130 W	DDR3-1600	0A89435	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600	0A89440	Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436	Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89439	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89437	Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89438	Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442	Intel Xeon E5-2600 v2 Series										Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19548	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19549	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19550	Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19553	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	8 GT/s	95 W	DDR3-1866	0C19551	Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20MB	8 GT/s	95 W	DDR3-1866	0C19552	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	70 W	DDR3-1600	0C19554	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20MB	7.2 GT/s	95 W	DDR3-1600	0C19555	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19558	Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60 W	DDR3-1600	0C19556	Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19557	Xeon E5-2609 v2	4	4	2.5 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19559	Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560
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Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB	8 GT/s	130 W	DDR3-1600	0A89435																																																																																																																																																																																																																																																																																																																																
Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432																																																																																																																																																																																																																																																																																																																																
Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462																																																																																																																																																																																																																																																																																																																																
Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434																																																																																																																																																																																																																																																																																																																																
Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433																																																																																																																																																																																																																																																																																																																																
Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600	0A89440																																																																																																																																																																																																																																																																																																																																
Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436																																																																																																																																																																																																																																																																																																																																
Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89439																																																																																																																																																																																																																																																																																																																																
Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89437																																																																																																																																																																																																																																																																																																																																
Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89438																																																																																																																																																																																																																																																																																																																																
Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441																																																																																																																																																																																																																																																																																																																																
Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442																																																																																																																																																																																																																																																																																																																																
Intel Xeon E5-2600 v2 Series																																																																																																																																																																																																																																																																																																																																									
Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546																																																																																																																																																																																																																																																																																																																																
Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547																																																																																																																																																																																																																																																																																																																																
Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19548																																																																																																																																																																																																																																																																																																																																
Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19549																																																																																																																																																																																																																																																																																																																																
Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19550																																																																																																																																																																																																																																																																																																																																
Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19553																																																																																																																																																																																																																																																																																																																																
Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	8 GT/s	95 W	DDR3-1866	0C19551																																																																																																																																																																																																																																																																																																																																
Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20MB	8 GT/s	95 W	DDR3-1866	0C19552																																																																																																																																																																																																																																																																																																																																
Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	70 W	DDR3-1600	0C19554																																																																																																																																																																																																																																																																																																																																
Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20MB	7.2 GT/s	95 W	DDR3-1600	0C19555																																																																																																																																																																																																																																																																																																																																
Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19558																																																																																																																																																																																																																																																																																																																																
Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60 W	DDR3-1600	0C19556																																																																																																																																																																																																																																																																																																																																
Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19557																																																																																																																																																																																																																																																																																																																																
Xeon E5-2609 v2	4	4	2.5 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19559																																																																																																																																																																																																																																																																																																																																
Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560																																																																																																																																																																																																																																																																																																																																
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin																																																																																																																																																																																																																																																																																																																																								
Memory DIMM sockets	twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)																																																																																																																																																																																																																																																																																																																																								
Memory capacity	Up to 320GB (16GBx20)																																																																																																																																																																																																																																																																																																																																								
Memory protection	ECC, memory mirroring, memory sparing																																																																																																																																																																																																																																																																																																																																								
Memory options	<table><tr><th>Memory options</th><th>Part Number</th></tr><tr><td>ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM</td><td>0C19533</td></tr><tr><td>ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM</td><td>0C19534</td></tr><tr><td>ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM</td><td>0C19535</td></tr></table> <i>Notes:</i> ● Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs ● By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting ● When using Intel Xeon E5-2600 series processors, LV RIMM is needed to run at 1.5V to support all 20 memory DIMM sockets. If LV RIMM runs at 1.35V, only 16 memory DIMM sockets are functional (8 of 12 for CPU 1, 8 for CPU 2)	Memory options	Part Number	ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM	0C19533	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM	0C19534	ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM	0C19535																																																																																																																																																																																																																																																																																																																																
Memory options	Part Number																																																																																																																																																																																																																																																																																																																																								
ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM	0C19533																																																																																																																																																																																																																																																																																																																																								
ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM	0C19534																																																																																																																																																																																																																																																																																																																																								
ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM	0C19535																																																																																																																																																																																																																																																																																																																																								

ThinkServer RD540 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the following configurations: • 8 x 3.5" SAS/SATA disk drive bays • 8 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays						
Disk drive options	Disk drive options						Part Number
	Hot-swap Disk drive for 3.5" bay						
	3.5" SATA Hard Drive						
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89473
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89474
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89475
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89477
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19520
	3.5" SAS Hard Drive						
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19530
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19531
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19532
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive						67Y2616
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive						67Y2618
	2.5" SSD for 3.5" disk bay						
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit						0C19571
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit						0C19572
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit						0C19573
	Hot-swap Disk drive for 2.5" bay						
	2.5" SATA Hard Drive						
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19495
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19496
	2.5" SAS Hard Drive						
	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive						67Y2619
	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive						67Y2621
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive						0A89409
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive						0C19494
	2.5" SSD						
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive						0A89420
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive						0A89418
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive						0A89419
RAID support	RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support
	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	• optional CacheVault flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath
RAID options	RAID controller and RAID upgrade options						Part Number
	ThinkServer RAID 500 Adapter II						0A89464
	ThinkServer RAID 500 Upgrade Key for Advanced RAID						0A89407
	ThinkServer RAID 700 Adapter II						0A89463
	ThinkServer RAID 700 Battery						67Y2647
	ThinkServer RAID 710 Adapter						0C19489
	ThinkServer RAID 710 Super Capacitor Module (CacheVault)						0C19490
	ThinkServer RAID 710 FastPath Software Key						0C19491
	ThinkServer RAID 710 CacheCade Pro 2.0 Software Key						0C19492

ThinkServer RD540 Optional Configurations - Network, System Management, Power Supply

Network options	Network and HBA options		Part Number
	ThinkServer 1 Gbps Ethernet I350-T2 Server Adapter by Intel		0C19506
	ThinkServer 1 Gbps Ethernet I350-T4 Server Adapter by Intel		0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel		0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel		0C19486
	Lenovo 10Gbps Ethernet Fiber Module by Intel		0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel		0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic		0C19483
	HBA		
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex		0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex		0C19478
Security options	Trusted Platform Module options		Part Number
	ThinkServer Trusted Platform Module		0A89428
Systems management options for iKVM	System Management options		Part Number
	ThinkServer Management Module Premium		67Y2624
Power supply options	Power supply options		Part Number
	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack		4X20E54690

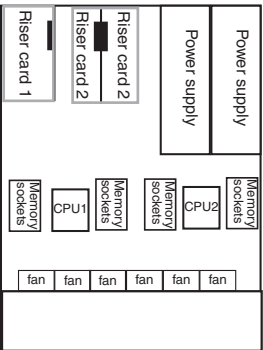
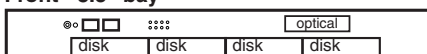
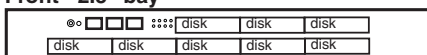
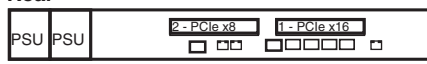
ThinkServer RD540 (70AT) - TopSeller

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AT0004UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID710	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0008UX	1xE5-2603 v2 4C/1.8GHz/ 10MB/1333MHz	4GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0009UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000BUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000CUX	1xE5-2650L v2 10C/1.7GHz/ 25MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000AUX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0006UX	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16Gx4	4x3.5"	RAID700 +Battery	3x500GB 3.5" SATA(RAID5)	DVD	No	iKVM	350T4	Cable	800Wx2	No	1
70AT0005US	2xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	4GBx20	4x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +2x3TB 3.5" SAS (RAID1)	DVD±RW	No	iKVM	X520SR2	Cable	800Wx2	Standard	1

1. Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see [ThinkServer RD540 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD540, please see [ThinkServer RD540 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					2U Rack top				
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin									
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)									
Memory protection	ECC, memory mirroring, memory sparing									
Disk drive bays	Supports 4 x 3.5" or 8 x 2.5" disk drive bays									
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support					
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key					
	* All RAID adapters supports SAS and SATA drives ** RAID 50 and 60 are supported on 8x2.5" disk bays models									
Optical (optional)	4x3.5" bay models: one DVD±RW or DVD ROM, slim, SATA interface 8x2.5" bay models: no optical bay, use optional external USB optical									
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management									
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter									
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on selected models, IDM LED lights indicate failing component category,					Front and Rear Ports				
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)					Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots				
Cable mgmt (opt)	Optional cable management arm on selected models					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Mechanical				
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, see ThinkServer RD540 Platform Specifications					• 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured				

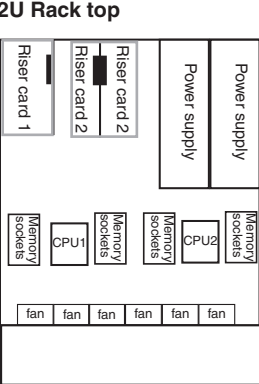
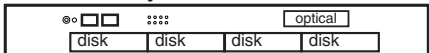
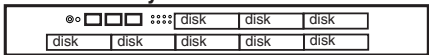
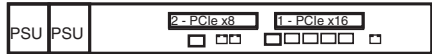
See footnotes for important warranty information
Model(s) announced October 29, 2013

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(70AT-1) October 2013

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AU000CUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000SUX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000TUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000UUX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000VUX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000WUX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3

1. Model in *italics* is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see [ThinkServer RD540 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD540, please see [ThinkServer RD540 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors						
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 4 x 3.5" or 8 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives ** RAID 50 and 60 are supported on 8x2.5" disk bays models							
Optical (optional)	4x3.5" bay models: one DVD±RW or DVD ROM, slim, SATA interface 8x2.5" bay models: no optical bay, use optional external USB optical						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on selected models, IDM LED lights indicate failing component category,						
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate						
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA	
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, see ThinkServer RD540 Platform Specifications						
						Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8	
						Mechanical • 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured	

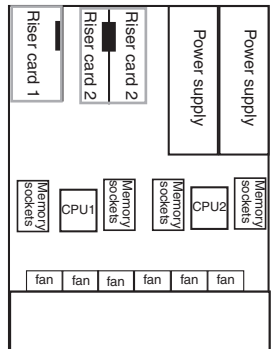
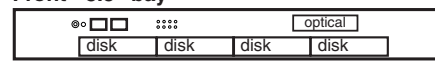
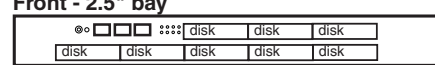
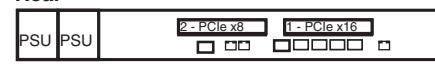
ThinkServer RD540 (70AU) - TopSeller - II

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AU000XUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710 +CacheVault	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000YUX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710 +FastPath	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000FUX	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	4GBx2	8x2.5"	RAID700	2x500GB 2.5" SATA(RAID1)	No	No	IPMI	350T2	No	800Wx2	No	1
70AU000DUS	2xE5-2660 v2 10C/2.2GHz/ 25MB/1866MHz	8GBx20	8x2.5"	RAID500 +upgrade	2x300GB 2.5" SAS(RAID1) +6x300GB 2.5" SAS(RAID50)	No	No	iKVM	X520SR2	Cable	800Wx2	Standard	1
70AU000EUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	16Gx4	8x2.5"	RAID710 +FastPath	6x100GB SSD(RAID50)	No	No	IPMI	350T4	No	800Wx2	No	1

1. Model in *italics* is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see [ThinkServer RD540 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD540, please see [ThinkServer RD540 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					2U Rack top									
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin														
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)														
Memory protection	ECC, memory mirroring, memory sparing														
Disk drive bays	Supports 4 x 3.5" or 8 x 2.5" disk drive bays														
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades										
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support										
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)										
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key										
* All RAID adapters supports SAS and SATA drives ** RAID 50 and 60 are supported on 8x2.5" disk bays models															
Optical (optional)	4x3.5" bay models: one DVD±RW or DVD ROM, slim, SATA interface 8x2.5" bay models: no optical bay, use optional external USB optical					Front - 3.5" bay 									
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management					Front - 2.5" bay 									
Discrete network (optional)	- Intel Ethernet Server Adapter i350-T2 - Intel Ethernet Server Adapter i350-T4 - Intel 10Gbps Ethernet X520-SR2 Server adapter - Intel 10Gbps Ethernet X520-DA2 Server adapter - Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter - Intel 10Gbps Ethernet X540-T2 Server adapter					Rear 									
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on selected models, IDM LED lights indicate failing component category,					Front and Rear Ports									
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) <i>70AU000FUX does not include TPM, additional TPM option is needed</i>					Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA									
Systems management (Optional iKVM)	- Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions - Control Panel LEDs shows the status of power, ID, network, system - Lenovo SmartGrid Manager - ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots									
Cable mgmt (opt)	Optional cable management arm on selected models					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8									
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Mechanical									
Environmental certifications	- Energy Star Server 2.0 qualified - RoHS-compliant More environmental information and requirements, see ThinkServer RD540 Platform Specifications					1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured									

See footnotes for important warranty information
Model(s) announced October 29, 2013

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(70AU-2) October 2013

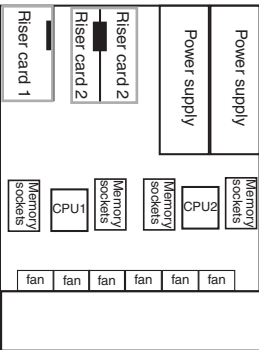
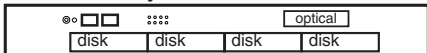
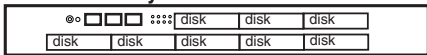
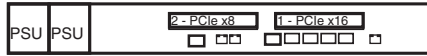
ThinkServer RD540 (70AR)

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AR0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AR0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

1. Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see [ThinkServer RD540 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD540, please see [ThinkServer RD540 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors						
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 4 x 3.5" or 8 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives ** RAID 50 and 60 are supported on 8x2.5" disk bays models							
Optical (optional)	4x3.5" bay models: one DVD±RW or DVD ROM, slim, SATA interface 8x2.5" bay models: no optical bay, use optional external USB optical						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on selected models, IDM LED lights indicate failing component category,					Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA	
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8	
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Mechanical • 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured	
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, see ThinkServer RD540 Platform Specifications						

See footnotes for important warranty information
Model(s) announced October 29, 2013

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(70AR-1) October 2013

ThinkServer RD540 (70AS)

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AS0008UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AS000GUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	iKVM	No	No	800Wx1	No	3

1. Model in *italics* is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see [ThinkServer RD540 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD540, please see [ThinkServer RD540 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors				
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin				
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)				
Memory protection	ECC, memory mirroring, memory sparing				
Disk drive bays	Supports 4 x 3.5" or 8 x 2.5" disk drive bays				
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key
	* All RAID adapters supports SAS and SATA drives ** RAID 50 and 60 are supported on 8x2.5" disk bays models				
Optical (optional)	4x3.5" bay models: one DVD±RW or DVD ROM, slim, SATA interface 8x2.5" bay models: no optical bay, use optional external USB optical				
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management				
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on selected models, IDM LED lights indicate failing component category,				
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)				
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate				
Cable mgmt (opt)	Optional cable management arm on selected models				
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies				
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, see ThinkServer RD540 Platform Specifications				

2U Rack top

The diagram shows the internal layout of a 2U rack server. At the top, there are two riser cards labeled 'Riser card 1' and 'Riser card 2'. Below them are two power supply units labeled 'Power supply'. In the center, there are two CPU sockets labeled 'CPU1' and 'CPU2', each with four memory sockets labeled 'Memory sockets' on either side. At the bottom, there are six fans labeled 'fan'.

Front - 3.5" bay

The diagram shows the front view of a 3.5-inch bay. It features four drive bays. The first bay on the left is labeled 'optical'. The next three bays are labeled 'disk'.

Front - 2.5" bay

The diagram shows the front view of a 2.5-inch bay. It features five drive bays, all labeled 'disk'.

Rear

The diagram shows the rear view of the server. It features two power supply units labeled 'PSU'. To the right of the PSUs, there are two PCIe slots: a half-length slot labeled '2 - PCIe x8' and a full-length slot labeled '1 - PCIe x16'. Below these slots are several status LEDs.

Front and Rear Ports

Front: 2 USB 2.0
1 VGA (for 8x2.5" disk bays models)
Rear: 4 USB 2.0
1 serial (9-pin)
2 ethernet (RJ-45)
1 RJ-45 (dedicate/share mgmt)
1 VGA

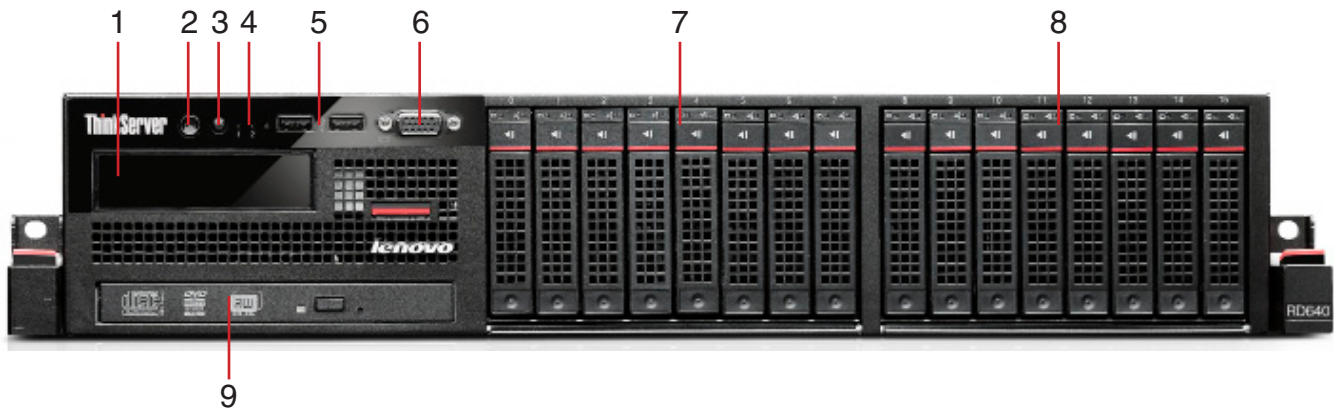
Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

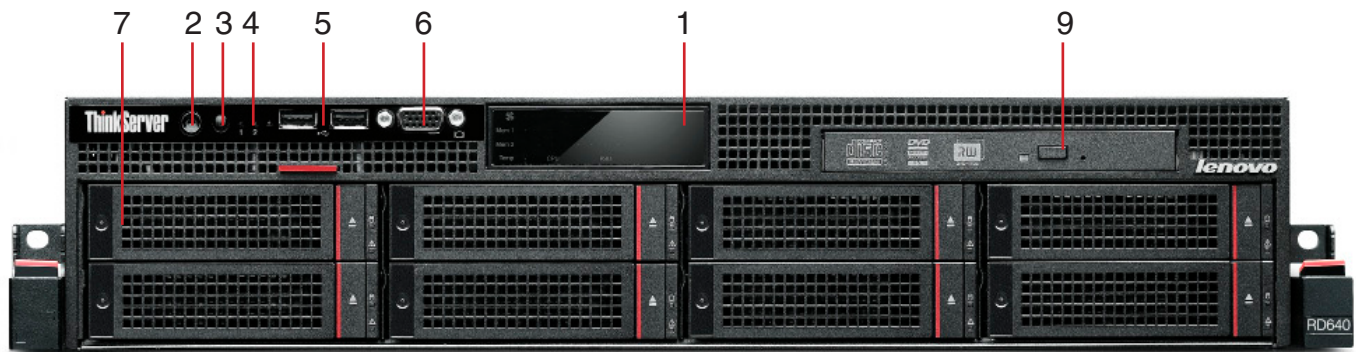
Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

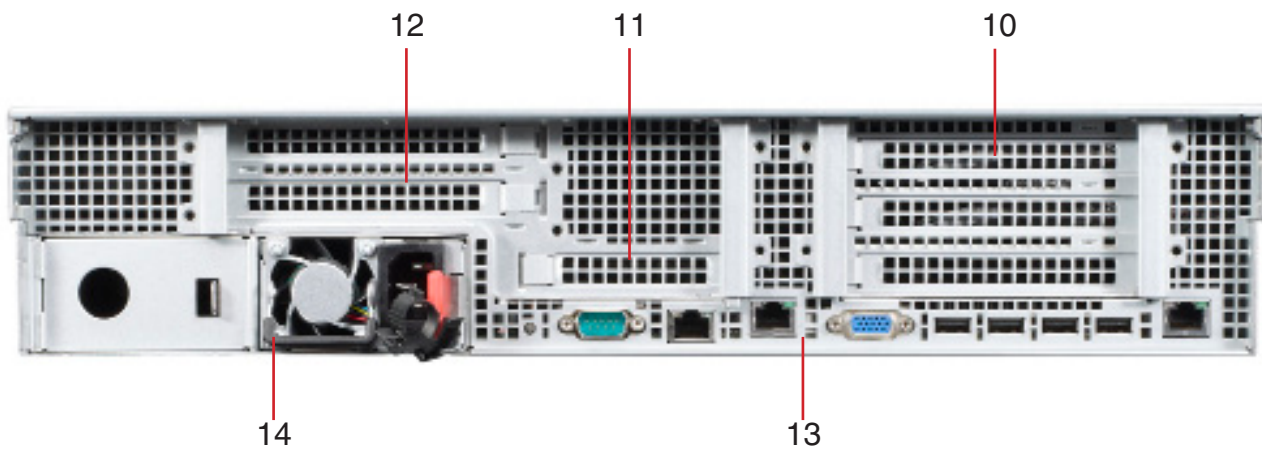
ThinkServer RD640 Overview - Front and Rear



ThinkServer RD640 with 8x2.5"/16x2.5" Disk Drive Bays



ThinkServer RD640 with 8x3.5" Disk Drive Bays



Front View

Rear View

1. Intelligent Diagnostics Premium Module (optional)
2. Power Button with LED
3. ID button with LED
4. 2 Network interface status LEDs
5. 2 USB 2.0
6. 1 VGA
7. Hot-swap disk drive bays
8. Hot-swap disk drive bays for 16x2.5" hard drive bays model
9. Optical (optional)

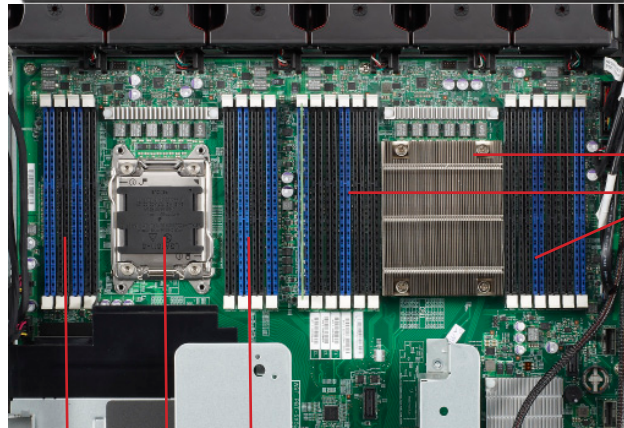
10. PCI Express slots 1-3
11. PCI Express slots 4
12. PCI Express slots 5-6 (for dual processors model)
13. Rear ports:
 - 4 USB 2.0
 - 1 serial
 - 2 ethernet
 - 1 RJ-45 (dedicate/share mgmt)
 - 1 VGA
14. Hot-swap power supplies

ThinkServer RD640 Overview - Internal



Internal View

- 1. Hot-swap cooling fans
- 2. Processors and memory DIMM sockets (under cooling shroud, see below)
- 3. PCI Express slots

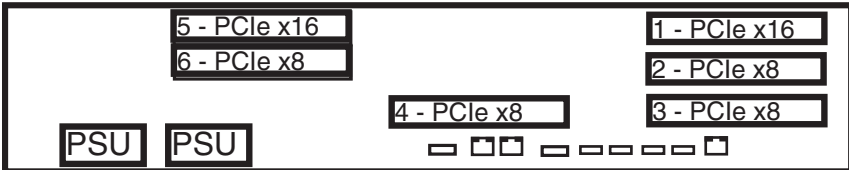


Processors and Memory DIMM Sockets (under cooling shroud)

- 1. CPU 1
- 2. 12 Memory DIMM sockets for CPU 1
- 3. CPU 2 (optional)
- 4. 8 Memory DIMM sockets for CPU 2 (for dual processors model)

4 3 4

ThinkServer RD640 Platform Specifications

Components	Specifications		
Chipset	Intel C602J Chipset		
Mechanical	• 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured		
Front ports	Two USB 2.0, one analog VGA DB-15 connector		
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector		
Expansion Slots	 Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6 Slot 1: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: half-length, full-height, PCI Express 3.0 x8 Slot 4: Low Profile, PCI Express 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCI Express 3.0 x8		
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; <i>Maximum resolution: 1920x1200@60Hz</i>		
Hot-swap parts	Disk drives, power supplies, and cooling fans		
Safety, environment, and certifications	Environmental certifications	• Energy Star Server 1.1 qualified • RoHS-compliant	
	EMC	FCC Class A, CSA CE	
	240VA	Supports	
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	
	Temperature - non operating (no package)	-10 °C to 60 °C	
	Temperature - non operating (with package)	-40 °C to 70 °C	
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)	
	Humidity - operating	8%~80%, non-condensing	
	Humidity - non operating (no package)	8%~80%, non-condensing	
	Humidity - non operating (with package)	8%~90%, non-condensing	
	Acoustic noise (idle/working mode)	Category	Normal Configuration
		CPU	1
		HDD	2x 900GB 2.5" SAS 6Gb/s
		Memory	1x 8GB 1600MHz LVRDIMM
		PCIe adapters	I350 X520-DA2 Emulex LPe16002
		PSU	1x 800W
		RAID	RAID 700 adapter
		Sound Pressure (operating)	44.1 dB(A)
		Sound Pressure (idle)	44.4 dB(A)
			Best Configuration
			2
			16x 900GB 2.5" SAS 6Gb/s
			20x 8GB 1600MHz LVRDIMM
			I350 X520-DA2 Emulex LPe16002
			2x 800W
			RAID 700 adapter
			42.91 dB(A)
			43.8 dB(A)

ThinkServer RD640 Optional Configurations - Processor and Memory

Rack kit	Included in models																																																																																																																																																																																																																																																																																																																																																		
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 or Xeon E5-2600 v2 families, up to 8 cores (E5-2600 series)/12 cores (E5-2600 v2 series), two QPI links up to 8.0GT/s each, up to 20MB (E5-2600 series)/30MB (E5-2600 v2 series) cache, integrated 4-channel DDR3 memory controller up to 1600MHz (E5-2600 series)/1866MHz (E5-2600 v2 series). The following processor options are available: <table><tr><th rowspan="2">Processor Number</th><th colspan="8">Processors Specifications*</th><th rowspan="2">Part Number</th></tr><tr><th># of Cores</th><th># of Threads</th><th>Clock Speed</th><th>Max Turbo Frequency</th><th>Cache</th><th>QPI Speed</th><th>Max TDP</th><th>Memory Speed</th></tr><tr><td colspan="10">Intel Xeon E5-2600 Series</td></tr><tr><td>Xeon E5-2690</td><td>8</td><td>16</td><td>2.9 GHz</td><td>3.8 GHz</td><td>20MB</td><td>8 GT/s</td><td>135 W</td><td>DDR3-1600</td><td>0A89429</td></tr><tr><td>Xeon E5-2680</td><td>8</td><td>16</td><td>2.7 GHz</td><td>3.5 GHz</td><td>20MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89430</td></tr><tr><td>Xeon E5-2670</td><td>8</td><td>16</td><td>2.6 GHz</td><td>3.3 GHz</td><td>20MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1600</td><td>0A89431</td></tr><tr><td>Xeon E5-2667</td><td>6</td><td>12</td><td>2.9 GHz</td><td>3.5 GHz</td><td>15MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89435</td></tr><tr><td>Xeon E5-2665</td><td>8</td><td>16</td><td>2.4 GHz</td><td>3.1 GHz</td><td>20MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1600</td><td>0A89432</td></tr><tr><td>Xeon E5-2660</td><td>8</td><td>16</td><td>2.2 GHz</td><td>3 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0A89462</td></tr><tr><td>Xeon E5-2650L</td><td>8</td><td>16</td><td>1.8 GHz</td><td>2.3 GHz</td><td>20MB</td><td>8 GT/s</td><td>70 W</td><td>DDR3-1600</td><td>0A89434</td></tr><tr><td>Xeon E5-2650</td><td>8</td><td>16</td><td>2 GHz</td><td>2.8 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0A89433</td></tr><tr><td>Xeon E5-2643</td><td>4</td><td>8</td><td>3.3 GHz</td><td>3.5 GHz</td><td>10MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1600</td><td>0A89440</td></tr><tr><td>Xeon E5-2640</td><td>6</td><td>12</td><td>2.5 GHz</td><td>3 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89436</td></tr><tr><td>Xeon E5-2630L</td><td>6</td><td>12</td><td>2 GHz</td><td>2.5 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>60 W</td><td>DDR3-1333</td><td>0A89439</td></tr><tr><td>Xeon E5-2630</td><td>6</td><td>12</td><td>2.3 GHz</td><td>2.8 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89437</td></tr><tr><td>Xeon E5-2620</td><td>6</td><td>12</td><td>2 GHz</td><td>2.5 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1333</td><td>0A89438</td></tr><tr><td>Xeon E5-2609</td><td>4</td><td>4</td><td>2.4 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1066</td><td>0A89441</td></tr><tr><td>Xeon E5-2603</td><td>4</td><td>4</td><td>1.8 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1066</td><td>0A89442</td></tr><tr><td colspan="10">Intel Xeon E5-2600 v2 Series</td></tr><tr><td>Xeon E5-2697 v2</td><td>12</td><td>24</td><td>2.7 GHz</td><td>3.5 GHz</td><td>30MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19546</td></tr><tr><td>Xeon E5-2695 v2</td><td>12</td><td>24</td><td>2.4 GHz</td><td>3.2 GHz</td><td>30MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19547</td></tr><tr><td>Xeon E5-2690 v2</td><td>10</td><td>20</td><td>3 GHz</td><td>3.6 GHz</td><td>25MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19548</td></tr><tr><td>Xeon E5-2680 v2</td><td>10</td><td>20</td><td>2.8 GHz</td><td>3.6 GHz</td><td>25MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19549</td></tr><tr><td>Xeon E5-2670 v2</td><td>10</td><td>20</td><td>2.5 GHz</td><td>3.3 GHz</td><td>25MB</td><td>8 GT/s</td><td>115 W</td><td>DDR3-1866</td><td>0C19550</td></tr><tr><td>Xeon E5-2667 v2</td><td>8</td><td>16</td><td>3.3 GHz</td><td>4 GHz</td><td>25MB</td><td>8 GT/s</td><td>130 W</td><td>DDR3-1866</td><td>0C19553</td></tr><tr><td>Xeon E5-2660 v2</td><td>10</td><td>20</td><td>2.2 GHz</td><td>3 GHz</td><td>25MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1866</td><td>0C19551</td></tr><tr><td>Xeon E5-2650 v2</td><td>8</td><td>16</td><td>2.6 GHz</td><td>3.4 GHz</td><td>20MB</td><td>8 GT/s</td><td>95 W</td><td>DDR3-1866</td><td>0C19552</td></tr><tr><td>Xeon E5-2650L v2</td><td>10</td><td>20</td><td>1.7 GHz</td><td>2.1 GHz</td><td>25MB</td><td>7.2 GT/s</td><td>70 W</td><td>DDR3-1600</td><td>0C19554</td></tr><tr><td>Xeon E5-2640 v2</td><td>8</td><td>16</td><td>2 GHz</td><td>2.5 GHz</td><td>20MB</td><td>7.2 GT/s</td><td>95 W</td><td>DDR3-1600</td><td>0C19555</td></tr><tr><td>Xeon E5-2630 v2</td><td>6</td><td>12</td><td>2.6 GHz</td><td>3.1 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>80 W</td><td>DDR3-1600</td><td>0C19558</td></tr><tr><td>Xeon E5-2630L v2</td><td>6</td><td>12</td><td>2.4 GHz</td><td>2.8 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>60 W</td><td>DDR3-1600</td><td>0C19556</td></tr><tr><td>Xeon E5-2620 v2</td><td>6</td><td>12</td><td>2.1 GHz</td><td>2.6 GHz</td><td>15MB</td><td>7.2 GT/s</td><td>80 W</td><td>DDR3-1600</td><td>0C19557</td></tr><tr><td>Xeon E5-2609 v2</td><td>4</td><td>4</td><td>2.5 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1333</td><td>0C19559</td></tr><tr><td>Xeon E5-2603 v2</td><td>4</td><td>4</td><td>1.8 GHz</td><td></td><td>10MB</td><td>6.4 GT/s</td><td>80 W</td><td>DDR3-1333</td><td>0C19560</td></tr></table> <i>Notes:</i> All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided “as-is”. Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/	Processor Number	Processors Specifications*								Part Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Intel Xeon E5-2600 Series										Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20MB	8 GT/s	135 W	DDR3-1600	0A89429	Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0A89430	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89431	Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB	8 GT/s	130 W	DDR3-1600	0A89435	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600	0A89440	Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436	Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89439	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89437	Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89438	Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442	Intel Xeon E5-2600 v2 Series										Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19548	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19549	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19550	Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19553	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	8 GT/s	95 W	DDR3-1866	0C19551	Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20MB	8 GT/s	95 W	DDR3-1866	0C19552	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	70 W	DDR3-1600	0C19554	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20MB	7.2 GT/s	95 W	DDR3-1600	0C19555	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19558	Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60 W	DDR3-1600	0C19556	Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19557	Xeon E5-2609 v2	4	4	2.5 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19559	Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560
Processor Number	Processors Specifications*								Part Number																																																																																																																																																																																																																																																																																																																																										
	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed																																																																																																																																																																																																																																																																																																																																											
Intel Xeon E5-2600 Series																																																																																																																																																																																																																																																																																																																																																			
Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20MB	8 GT/s	135 W	DDR3-1600	0A89429																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0A89430																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89431																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB	8 GT/s	130 W	DDR3-1600	0A89435																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600	0A89440																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89439																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89437																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89438																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442																																																																																																																																																																																																																																																																																																																																										
Intel Xeon E5-2600 v2 Series																																																																																																																																																																																																																																																																																																																																																			
Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19548																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19549																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19550																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19553																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	8 GT/s	95 W	DDR3-1866	0C19551																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20MB	8 GT/s	95 W	DDR3-1866	0C19552																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	70 W	DDR3-1600	0C19554																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20MB	7.2 GT/s	95 W	DDR3-1600	0C19555																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19558																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60 W	DDR3-1600	0C19556																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19557																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2609 v2	4	4	2.5 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19559																																																																																																																																																																																																																																																																																																																																										
Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560																																																																																																																																																																																																																																																																																																																																										
Memory type	1600MHz, RDIMM and LV RDIMM, DDR3, 4-channel per processor, 240-pin																																																																																																																																																																																																																																																																																																																																																		
Memory DIMM sockets	twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)																																																																																																																																																																																																																																																																																																																																																		
Memory capacity	Up to 320GB (16GBx20)																																																																																																																																																																																																																																																																																																																																																		
Memory protection	ECC, memory mirroring, memory sparing																																																																																																																																																																																																																																																																																																																																																		
Memory options	<table><tr><th>Memory options</th><th>Part Number</th></tr><tr><td>ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM</td><td>0C19533</td></tr><tr><td>ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM</td><td>0C19534</td></tr><tr><td>ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM</td><td>0C19535</td></tr></table> <i>Notes:</i> ● Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs ● By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting ● When using Intel Xeon E5-2600 series processors, LV RIMM is needed to run at 1.5V to support all 20 memory DIMM sockets. If LV RIMM runs at 1.35V, only 16 memory DIMM sockets are functional (8 of 12 for CPU 1, 8 for CPU 2)	Memory options	Part Number	ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM	0C19533	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM	0C19534	ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM	0C19535																																																																																																																																																																																																																																																																																																																																										
Memory options	Part Number																																																																																																																																																																																																																																																																																																																																																		
ThinkServer 4GB DDR3L-1600MHz (1RX8) RDIMM	0C19533																																																																																																																																																																																																																																																																																																																																																		
ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM	0C19534																																																																																																																																																																																																																																																																																																																																																		
ThinkServer 16GB DDR3L-1600MHz (2RX4) RDIMM	0C19535																																																																																																																																																																																																																																																																																																																																																		

ThinkServer RD640 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the following configurations: • 8 x 3.5" SAS/SATA disk drive bays • 8 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays						
Disk drive options	Disk drive options						Part Number
	Hot-swap Disk drive for 3.5" bay						
	3.5" SATA Hard Drive						
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89473
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89474
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89475
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0A89477
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19520
	3.5" SAS Hard Drive						
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19530
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19531
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive						0C19532
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive						67Y2616
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive						67Y2618
	2.5" SSD for 3.5" disk bay						
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit						0C19571
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit						0C19572
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit						0C19573
	Hot-swap Disk drive for 2.5" bay						
	2.5" SATA Hard Drive						
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19495
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive						0C19496
	2.5" SAS Hard Drive						
	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive						67Y2619
	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive						67Y2621
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive						0A89409
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive						0C19494
	2.5" SSD						
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive						0A89420
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive						0A89418
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive						0A89419
RAID support	RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support
	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	• optional CacheVault flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath
RAID options	RAID controller and RAID upgrade options						Part Number
	ThinkServer RAID 500 Adapter II						0A89464
	ThinkServer RAID 500 Upgrade Key for Advanced RAID						0A89407
	ThinkServer RAID 700 Adapter II						0A89463
	ThinkServer RAID 700 Battery						67Y2647
	ThinkServer RAID 710 Adapter						0C19489
	ThinkServer RAID 710 Super Capacitor Module (CacheVault)						0C19490
	ThinkServer RAID 710 FastPath Software Key						0C19491
	ThinkServer RAID 710 CacheCade Pro 2.0 Software Key						0C19492

ThinkServer RD640 Optional Configurations - Network, System Management, Power Supply

Network options	Network and HBA options	Part Number
	ThinkServer 1 Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1 Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	HBA	
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
Security options	Trusted Platform Module options	Part Number
	ThinkServer Trusted Platform Module	0A89428
Systems management options for iKVM	System Management options	Part Number
	ThinkServer Management Module Premium	67Y2624
Power supply options	Power supply options	Part Number
	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

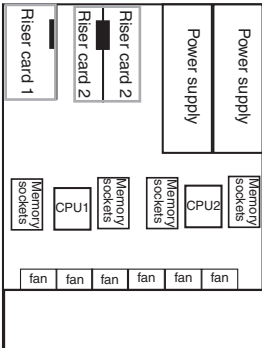
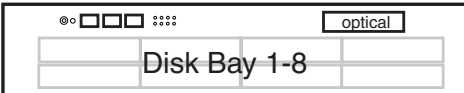
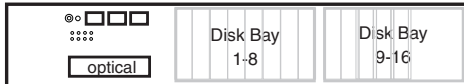
ThinkServer RD640 (70AY) - TopSeller

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AY0001US	2xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	4GBx20	8x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +6x1TB 3.5" SAS(RAID50)	DVD±RW	IDM Premium	iKVM	X520SR2 +350T2 +350T2	Cable	800Wx2	Standard	1
70AY0002UX	2xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	16GBx4	8x3.5"	RAID500 +Upgrade	6x3TB 3.5" SATA(RAID50) +2x3TB 3.5" SAS(RAID1)	DVD±RW	IDM	IPMI	350T4	No	800Wx2	No	1
70AY0003UX	1xE5-2630L v2 6C/2.4GHz/ 15MB/1600MHz	8GBx2	8x3.5"	RAID700	2x500GB 3.5" SATA(RAID1)	No	IDM	IPMI	350T2	No	800Wx2	No	1
70AY0005UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0007UX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0008UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin					
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)					
Memory protection	ECC, memory mirroring, memory sparing					
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays					
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	•optional CacheVault (CV) flash cache with super capacitor •optional CacheCade® Pro 2.0 •optional FastPath key	
* All RAID adapters supports SAS and SATA drives						
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface					Front - 3.5" bay
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management					
						Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter					
						Rear
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part					Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt), 1 VGA
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)					
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8
Cable mgmt (opt)	Optional cable management arm on selected models					
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications - Specifications of Standard Models sheet					

See footnotes for important warranty information
Model(s) announced October 29, 2013

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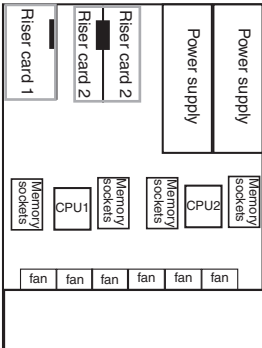
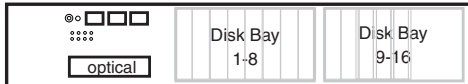
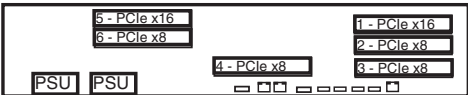
ThinkServer RD640 (70B1) - TopSeller

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70B10000US	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16GBx4	8x2.5"	RAID700 +Battery	3x300GB 2.5" SAS(RAID5)	DVD±RW	IDM	iKVM	350T2	Cable	800Wx2	Standard	1
70B10004UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10007UX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10008UX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10009UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					2U Rack top 	
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Front - 3.5" bay 	
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives						Front - 2.5" bay <i>(Bay 9-16 comes with 16x2.5" models)</i> 	
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management					Rear 	
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part					Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA	
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate					Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 <i>Slot 5-6 are available on dual processors models:</i> Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8	
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies						
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications					Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	

See footnotes for important warranty information
Model(s) announced October 29, 2013

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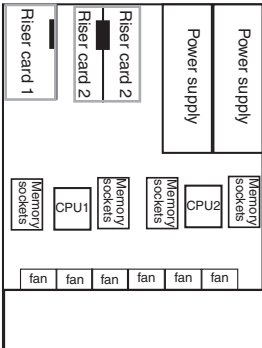
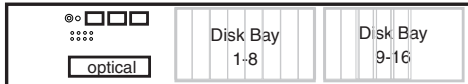
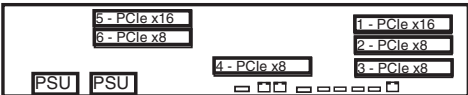
ThinkServer RD640 (70B0) - TopSeller

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70B00003US	2xE5-2690 v2 10C/3GHz/25MB/1866MHz	8GBx19+4GBx1	16x2.5"	RAID710 +CacheCade	2x100GB SSD(cache,RAID1) +14x1TB 2.5" SATA(RAID50)	DVD	IDM Premium	iKVM	X520SR2 +350T4+350T4	Cable	800Wx2	Standard	1
70B00004US	1xE5-2650 v2 8C/2.6GHz/20MB/1866MHz	4GBx2	16x2.5"	RAID500	2x900GB 2.5" SAS(RAID1)	No	IDM	IPMI	350T4	No	800Wx2	Standard	1
70B0000FUX	1xE5-2620 v2 6C/2.1GHz/15MB/1600MHz	8GBx1	16x2.5"	RAID700 +Battery	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3
70B0000GUX	1xE5-2650 v2 8C/2.6GHz/20MB/1866MHz	8GBx1	16x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					2U Rack top 	
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays					Front - 3.5" bay  Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)  Rear 	
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives						Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8 Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part					Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8 Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate						
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies					Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8 Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications						

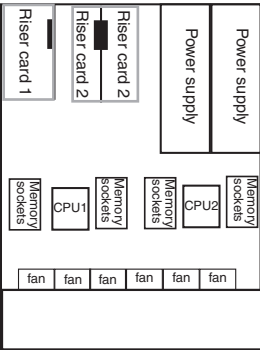
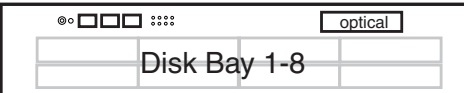
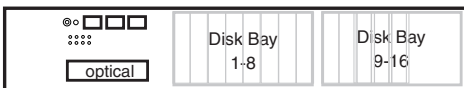
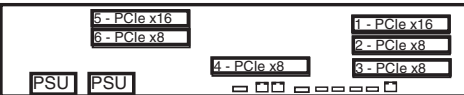
ThinkServer RD640 (70B0) - TopSeller (November 2013)

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70B0000LUX	1xE5-2650v2 8C/2.6GHz /20MB/1866MHz	8GBx1	16x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors					2U Rack top 				
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin									
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)									
Memory protection	ECC, memory mirroring, memory sparing									
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays					Front - 3.5" bay  Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)  Rear  Front and Rear Ports Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt), 1 VGA Expansion Slots Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8 Mechanical • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured				
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support					
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key					
* All RAID adapters supports SAS and SATA drives										
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface									
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management									
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter									
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part									
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)									
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate									
Cable mgmt (opt)	Optional cable management arm on selected models									
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies									
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications									

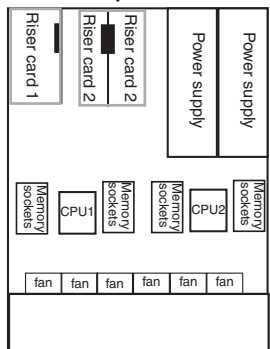
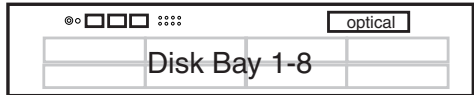
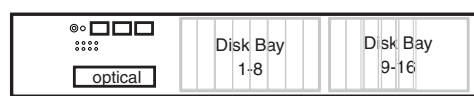
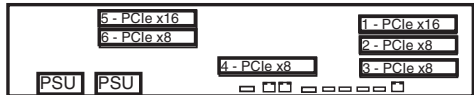
ThinkServer RD640 (70AV)

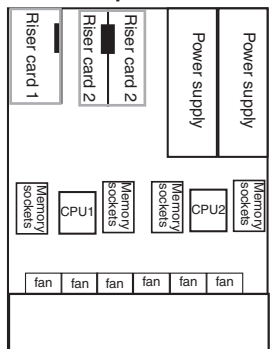
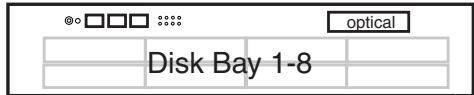
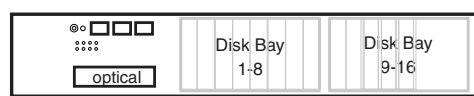
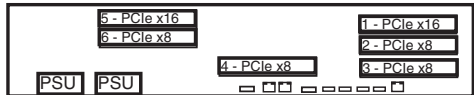
Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AV0000UX	1xE5-2620 v2 6C/2.1GHz/15MB/1600MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AV0001UX	1xE5-2620 v2 6C/2.1GHz/15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors						
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives							
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part						
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate						
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies						
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications						

2U Rack top	
	
Front - 3.5" bay	
	
Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)	
	
Rear	
	
Front and Rear Ports	
Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA	
Expansion Slots	
Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: Low Profile, PCIe 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8	
Mechanical	
• 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	

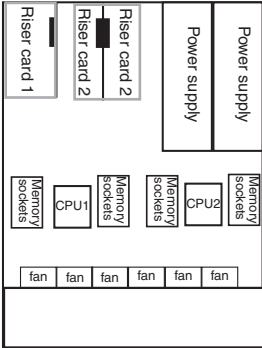
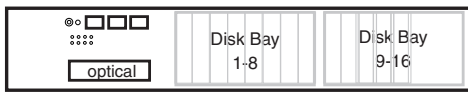
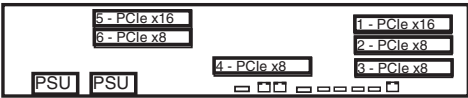
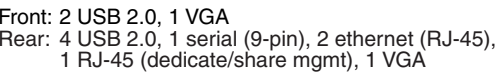
ThinkServer RD640 (70AX)

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AX0000UX	1xE5-2620 6C/2GHz/15MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors						
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives							
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part						
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate						
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies						
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications						

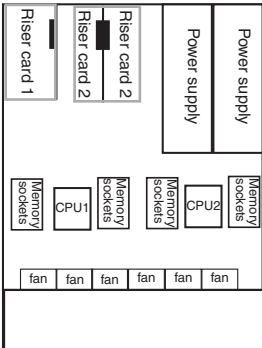
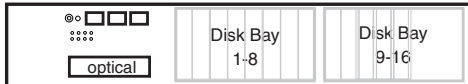
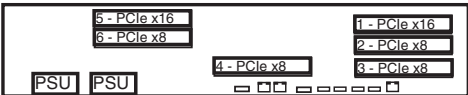
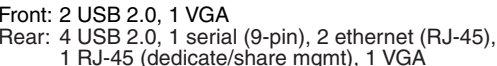
ThinkServer RD640 (70AW)

Product Specifications Reference (PSREF)

Type-model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics	Remote mgmt	Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AW0005UX	1xE5-2620 v2 6C/2.1GHz/15MB/1600MHz	8GBx1	16x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

1. Model in italics is Global model

- For detailed platform specifications, please see [ThinkServer RD640 Platform Specifications sheets](#)
- For optional configurations of ThinkServer RD640, please see [ThinkServer RD640 Optional Configurations sheets](#)

Chipset	Intel C602J Chipset, two LGA2011 sockets for processors						
Memory type	1600MHz, LV RDIMM, DDR3, 4-channel per processor, 240-pin						
Memory DIMMs	Twenty DIMM sockets (12 sockets for CPU 1, 8 sockets for CPU 2)						
Memory protection	ECC, memory mirroring, memory sparing						
Disk drive bays	Supports 8 x 3.5", or 8 x 2.5", or 16 x 2.5" disk drive bays						
RAID support	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	• optional CacheVault (CV) flash cache with super capacitor • optional CacheCade® Pro 2.0 • optional FastPath key		
* All RAID adapters supports SAS and SATA drives							
Optical (optional)	One DVD±RW or DVD ROM, slim, SATA interface						
Onboard network	Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel i350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management						
Discrete network (optional)	• Intel Ethernet Server Adapter I350-T2 • Intel Ethernet Server Adapter I350-T4 • Intel 10Gbps Ethernet X520-SR2 Server adapter • Intel 10Gbps Ethernet X520-DA2 Server adapter • Intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter • Intel 10Gbps Ethernet X540-T2 Server adapter						
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM Premium on selected models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part						
Security features	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)						
Systems management (Optional iKVM)	• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate						
Cable mgmt (opt)	Optional cable management arm on selected models						
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies						
Environmental certifications	• Energy Star Server 2.0 qualified • RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications						

ThinkServer RD530 Photography - 3.5" disk bays *

** Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD530 accessories*



- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to four 3.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to eight fans (7+1 redundant), non hot-swap

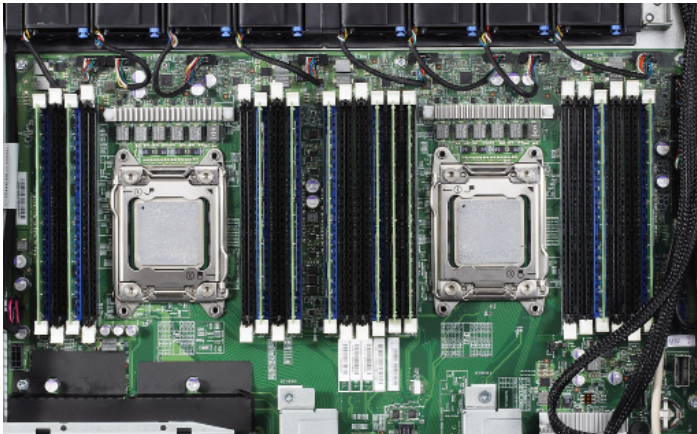
ThinkServer RD530 Photography - 2.5" disk bays *

* Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD530 accessories

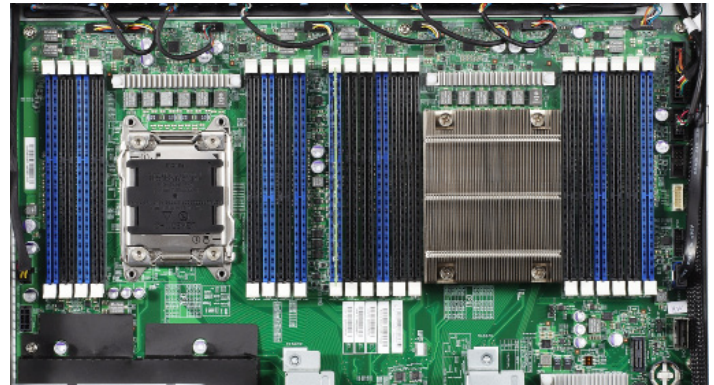


- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to eight 2.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to eight fans (7+1 redundant), non hot-swap

ThinkServer RD530 Photography - Details



Dual processors



Single processor



ThinkServer 800W Hot-Swap power supply
for ThinkServer RD530/RD630
(80 PLUS® Gold qualified,
redundant with two power supplies)



2.5" Hot-swap disk bay



ThinkServer RD530 rear I/O ports

ThinkServer RD530 with 3.5" Disk Bay (2570) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2570-A2U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2570-A3U	1xE5-2640	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2570-A4U	2xE5-2640	1333MHz RDIMM	2x8GB	No	700+Battery	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A5U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A6U	1xE5-2670	1333MHz RDIMM	2x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A7U	1xE5-2640	1333MHz RDIMM	1x16GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard,
Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)

Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;
RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Four 3.5" hot-swap SATA/SAS disk bays

Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700

RAID Support
Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter

Disk(s)
3.5" SATA: SATA 6.0Gb/s, 7200 rpm
3.5" SAS: SAS 6.0Gb/s, 15000 rpm

Tape drive
None
Optical
DVD±RW or DVD ROM, slim
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2

Riser card
Two USB 2.0

Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector

Rear ports
Supports IDM on selected models

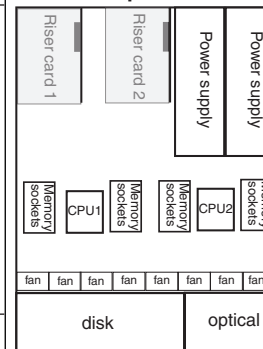
Intelligent Diagnostics Module (IDM)
Basic: IDM LED lights indicate failing component category
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

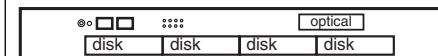
Prerequisites
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Cable: contains cable management arm
Cooling
Up to eight fans (7+1 redundant), non-hot swap

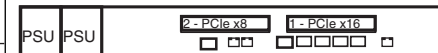
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-5 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD530 with 3.5" Disk Bay (2569) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2569-A1U	2xE5-2640	1333MHz RDIMM	2x8GB	5	700+Battery	3x500GB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM iKVM	No	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet														
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)														
Implementation	Two LGA2011 sockets														
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays														
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter														
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card	Two USB 2.0														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports	Supports IDM on selected models Basic: IDM LED lights indicate failing component category Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Intelligent Diagnostics Module (IDM)															
Systems mgmt															
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to eight fans (7+1 redundant), non-hot swap														

1U Rack top

Front

Rear

Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1	5.25", 0.5" high, external,	for optical
Bay 2-5	3.5", 1" high, external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant

RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD530 with 3.5" Disk Bay (2573)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2573-A1U	1xE5-2620	1333MHz	RDIMM 1x8GB	No	700		4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2573-A2U	1xE5-2670	1333MHz	RDIMM 2x8GB	No	700+Battery		4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2573-A3U	1xE5-2640	1333MHz	RDIMM 1x16GB	No	700		4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2573-A4U	1xE5-2650	1333MHz	RDIMM 2x8GB	No	700+Battery		4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2573-A5U	1xE5-2620	1333MHz	RDIMM 2x8GB	No	700+Battery	4x500GB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2573-A6U	1xE5-2650	1333MHz	RDIMM 4x8GB	No	700+Battery	4x300GB 3.5" SAS	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard.
Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)

Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;
RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Four 3.5" hot-swap SATA/SAS disk bays

Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700

RAID Support
Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter

Disk(s)
3.5" SATA: SATA 6.0Gb/s, 7200 rpm
3.5" SAS: SAS 6.0Gb/s, 15000 rpm

Tape drive
None
Optical
DVD±RW or DVD ROM, slim
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2

Riser card
Two USB 2.0

Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector

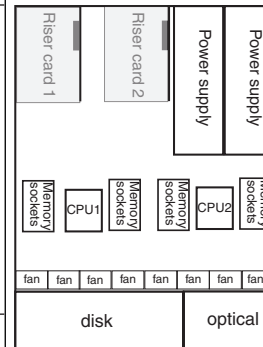
Rear ports
Supports IDM on selected models
Basic: IDM LED lights indicate failing component category
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

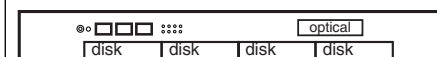
Prerequisites
SATA/SAS disk, OS
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Optional cable management arm on selected models
Cooling
Up to eight fans (7+1 redundant), non-hot swap

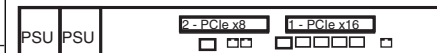
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-5 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD530 with 2.5" Disk Bay (2575) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2575-A1U	1xE5-2620	1333MHz RDIMM	1x4GB	No	500	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A2U	1xE5-2640	1333MHz RDIMM	2x4GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A4U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A6U	1xE5-2640	1333MHz RDIMM	2x8GB	No	700	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A7U	1xE5-2650	1333MHz RDIMM	3x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A8U	1xE5-2670	1333MHz RDIMM	3x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A9U	2xE5-2650	1333MHz RDIMM	4x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard,
Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)

Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;
RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Eight 2.5" hot-swap SATA/SAS disk bays
Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support
Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s)
2.5" SAS: SAS 6.0Gb/s, 10000 rpm
SSD: Solid State Drive, 2.5"

Tape drive
None
Optical
None (use USB port)
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2

Riser card
Two USB 2.0, one analog VGA DB-15 connector

Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector

Rear ports
Supports IDM on selected models
Intelligent Diagnostics Module (IDM)
Basic: IDM LED lights indicate failing component category

Systems mgmt
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

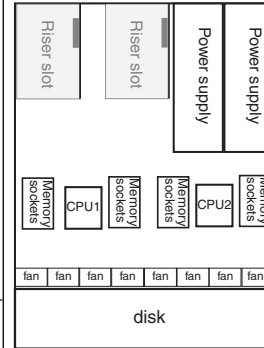
Prerequisites
SATA/SAS disk, OS
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit

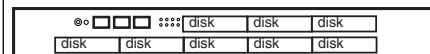
Cable management
Optional cable management arm on selected models

Cooling
Up to eight fans (7+1 redundant), non-hot swap

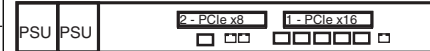
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.4"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1-8 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

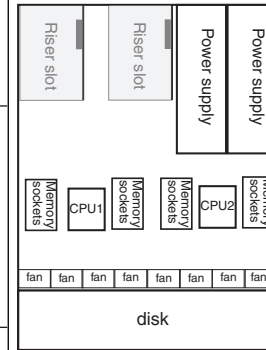
ThinkServer RD530 with 2.5" Disk Bay (2574) - TopSeller

Product Specifications Reference (PSREF)

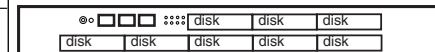
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2574-A1U	2xE5-2640	1333MHz RDIMM	2x8GB		700+Battery	2x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2574-A2U	2xE5-2640	1333MHz RDIMM	2x8GB	5	700+Battery	3x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet														
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)														
Implementation	Two LGA2011 sockets														
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Eight 2.5" hot-swap SATA/SAS disk bays														
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	None (use USB port)														
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2														
Riser card	Two USB 2.0, one analog VGA DB-15 connector														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector														
Rear ports	Supports IDM on selected models														
Intelligent Diagnostics Module (IDM)	Basic: IDM LED lights indicate failing component category														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to eight fans (7+1 redundant), non-hot swap														

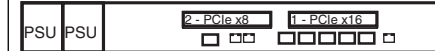
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.4"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1-8 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD530 with 2.5" Disk Bay (2576)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2576-A1U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700		8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2576-A2U	1xE5-2640	1333MHz RDIMM	1x8GB	No	700+Battery		8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A3U	1xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery		8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A4U	1xE5-2650	1333MHz RDIMM	6x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A5U	1xE5-2620	1333MHz RDIMM	3x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A6U	2xE5-2670	1333MHz RDIMM	6x16GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard,
Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)

Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;
RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Eight 2.5" hot-swap SATA/SAS disk bays
Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support
Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s)
2.5" SAS: SAS 6.0Gb/s, 10000 rpm
SSD: Solid State Drive, 2.5"

Tape drive
None
Optical
None (use USB port)
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2

Riser card
Two USB 2.0, one analog VGA DB-15 connector

Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector

Rear ports
Supports IDM on selected models

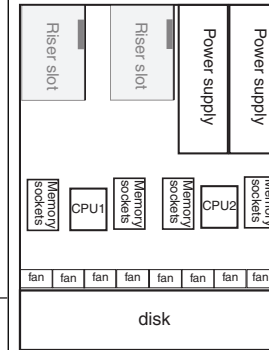
Intelligent Diagnostics Module (IDM)
Basic: IDM LED lights indicate failing component category
Systems mgmt
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

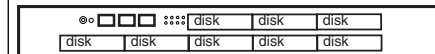
Prerequisites
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Optional cable management arm on selected models
Cooling
Up to eight fans (7+1 redundant), non-hot swap

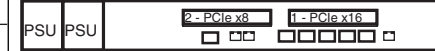
1U Rack top



Front



Rear



Mechanical

- 1U rack
- 19"W x 28.4"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

Disk Bays

Bay 1-8 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: Low Profile, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD630 Photography - Eight 3.5" disk bays*

*Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD630 accessories

ThinkServer™



- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to eight 3.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to six fans (5+1 redundant), hot-swap

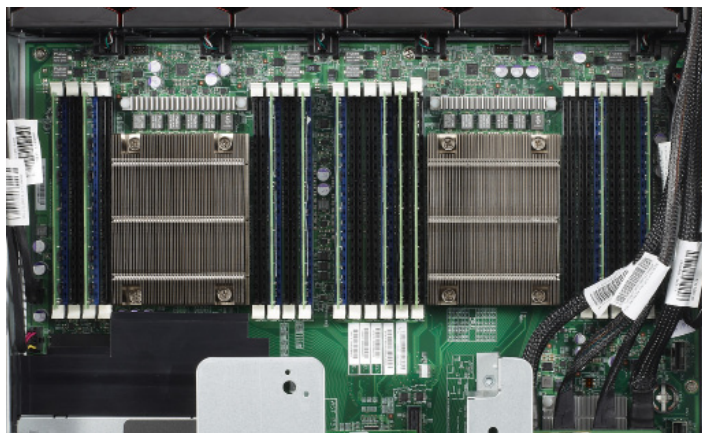
ThinkServer RD630 Photography - 2.5" disk bays *

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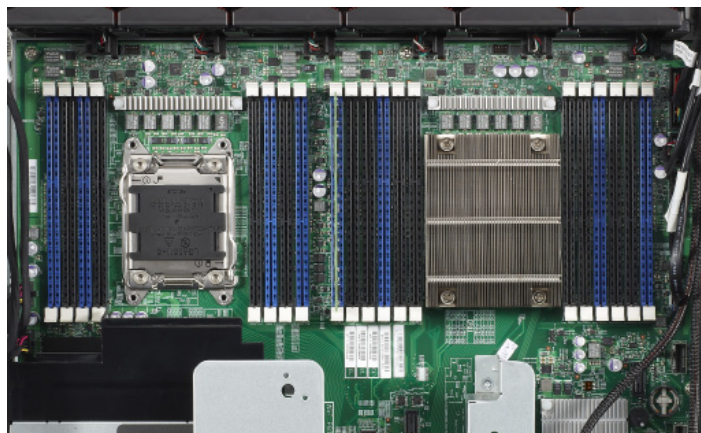
** Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD630 accessories*



- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to sixteen 2.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to six fans (5+1 redundant), hot-swap



Dual processors



Single processor



2.5" Hot-swap disk bay



2.5" Hot-swap disk bay



2.5" Hot-swap SAS 6.0Gb/s hard drive



3.5" Hot-swap SAS 6.0Gb/s hard drive



ThinkServer RAID 700 Adapter with battery
(LSI® SAS 9260-8i with iBBU08)



ThinkServer RAID 700 Adapter with battery
(LSI SAS 9260-8i with iBBU08)



ThinkServer 800W Hot-Swap power supply
for ThinkServer RD530/RD630
(80 PLUS® Gold qualified,
redundant with two power supplies)



Intelligent Diagnostics Module Premium

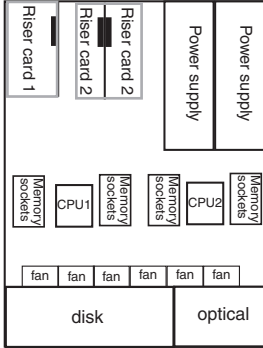


ThinkServer RD630 rear I/O ports

ThinkServer RD630 with 3.5" Disk Bay (2579) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2579-A2U	1xE5-2640	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iPMI	No	No	1
2579-A3U	1xE5-2640	1333MHz RDIMM	1x4GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
2579-A4U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iPMI	No	No	1
2579-A5U	1xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2579-A6U	1xE5-2620	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iPMI	No	No	1
2579-A7U	1xE5-2670	1333MHz RDIMM	1x16GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2579-A8U	1xE5-2670	1333MHz RDIMM	1x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet			2U Rack top												
Processor	Up to two processors, one or two processors standard, Intel Xeon E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets															
Implementation	Two LGA2011 sockets			Front 												
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; <i>RDIMM:</i> twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) <i>LV RDIMM:</i> sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)			Rear 												
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported			Slot 4, 5 are available on dual processors models only												
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz															
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays															
Disk controller	<i>RAID 500:</i> ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support <i>RAID 700:</i> ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Battery for 700:</i> Intelligent Battery Backup Unit (iBBU08) for RAID 700															
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter															
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm															
Tape drive	None															
Optical	DVD±RW or DVD ROM, slim															
Diskette	None (use USB port)															
Chipset	Intel C602J Chipset															
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5															
Riser card	Two USB 2.0, one analog VGA DB-15 connector															
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector															
Rear ports	Supports IDM or IDM Premium on selected models <i>Basic:</i> IDM LED lights indicate failing component category <i>Premium:</i> IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, iPMI 2.0-compliant baseboard management controller (BMC); <i>iKVM:</i> add-on ThinkServer Management Module Premium for iKVM functions															
Intelligent Diagnostics Module (IDM)																
Systems mgmt																
Security chip	No onboard TPM chip; <i>TPM:</i> additional add-on card for TPM function, TCG 1.2-compliant															
Prerequisites	SATA/SAS disk, OS															
Keyboard/mouse	None (use USB port)															
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies															
Rack kit	Includes rack kit															
Cable management	Optional cable management arm on selected models															
Cooling	Up to six fans (5+1 redundant), hot-swap															
				Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured												
				Disk Bays <table><tr><td>Bay 1</td><td>5.25",</td><td>0.5" high,</td><td>external,</td><td>for optical</td></tr><tr><td>Bay 2-9</td><td>3.5",</td><td>1" high,</td><td>external,</td><td>for disk</td></tr></table>			Bay 1	5.25",	0.5" high,	external,	for optical	Bay 2-9	3.5",	1" high,	external,	for disk
Bay 1	5.25",	0.5" high,	external,	for optical												
Bay 2-9	3.5",	1" high,	external,	for disk												
				Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 <i>Slot 4-5 are available on dual processors models:</i> Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8												
				Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)												
				Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage												
				Energy Management Technology - Intel Power Node Manager - Lenovo® SmartGrid Manager												
				ENERGY STAR® Server 1.1-compliant RoHS-compliant												
				For more accessories, see O-RDS sheet												

ThinkServer RD630 with 3.5" Disk Bay (2577) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2577-A1U	2xE5-2620	1333MHz RDIMM	2x8GB	5	700+Battery	6x500GB 3.5"	SATA 8xHS	SATA/SAS	DVD	Premium TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet													
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)													
Implementation	Two LGA2011 sockets													
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)													
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported													
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz													
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays													
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700													
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter													
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm													
Tape drive	None													
Optical	DVD±RW or DVD ROM, slim													
Diskette	None (use USB port)													
Chipset	Intel C602J Chipset													
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management													
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5													
Front ports	Two USB 2.0, one analog VGA DB-15 connector													
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector													
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions													
Systems mgmt														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant													
Prerequisites	SATA/SAS disk, OS													
Keyboard/mouse	None (use USB port)													
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies													
Rack kit	Includes rack kit													
Cable management	Optional cable management arm on selected models													
Cooling	Up to six fans (5+1 redundant), hot-swap													

2U Rack top

Front

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1	5.25", 0.5" high, external,	for optical
Bay 2-9	3.5", 1" high, external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
 Slot 2: half-length, full-height, PCI Express 3.0 x8
 Slot 3: Low Profile, PCI Express 3.0 x8
Slot 4-5 are available on dual processors models:
 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
 Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR Server 1.1-compliant
 RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD630 with 3.5" Disk Bay (2592)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2592-A1U	1xE5-2650	1333MHz RDIMM 1x8GB	1x8GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A2U	1xE5-2620	1333MHz RDIMM 1x4GB	1x4GB	No	700		8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2592-A3U	1xE5-2670	1333MHz RDIMM 1x16GB	1x16GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A4U	1xE5-2650	1333MHz RDIMM 6x8GB	6x8GB	No	700+Battery	4x300GB 3.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A5U	1xE5-2620	1333MHz RDIMM 3x8GB	3x8GB	No	700+Battery	3x500GB 3.5" SATA	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A6U	2xE5-2670	1333MHz RDIMM 6x16GB	6x16GB	No	700+Battery	4x300GB 3.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard, **Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2)**, Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; **RDIMM:** twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)
Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz

Disk bays
Eight 3.5" hot-swap SATA/SAS disk bays
Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support
Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s)
3.5" SATA: SATA 6.0Gb/s, 7200 rpm
3.5" SAS: SAS 6.0Gb/s, 15000 rpm

Tape drive
None
Optical
DVD±RW or DVD ROM, slim
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Riser card
Two USB 2.0, one analog VGA DB-15 connector
Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Rear ports
Supports IDM or IDM Premium on selected models

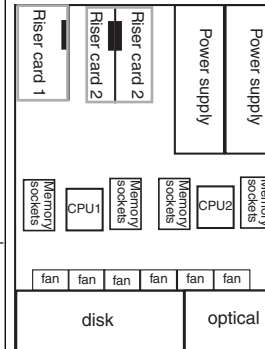
Intelligent Diagnostics Module (IDM)
Basic: IDM LED lights indicate failing component category
Premium: IDM Premium LED lights indicate individual failing part
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Systems mgmt
Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

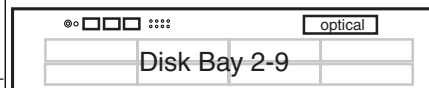
Prerequisites
SATA/SAS disk, OS
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Optional cable management arm on selected models
Cooling
Up to six fans (5+1 redundant), hot-swap

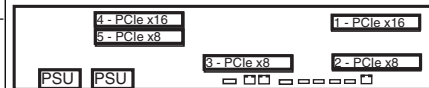
2U Rack top



Front



Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-9 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 3.0 x8
Slot 3: Low Profile, PCI Express 3.0 x8
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

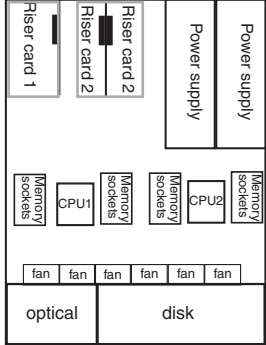
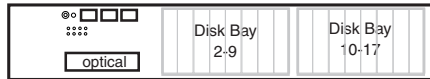
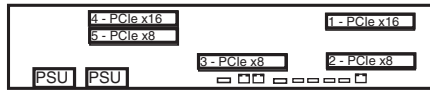
- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD630 with 2.5" Disk Bay (2594) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2594-A1U	1xE5-2620	1333MHz RDIMM	2x4GB	No	500	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2594-A2U	1xE5-2640	1333MHz RDIMM	2x4GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-A3U	1xE5-2660	1333MHz RDIMM	2x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-A4U	1xE5-2620	1333MHz RDIMM	1x4GB	No	500	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
2594-A5U	1xE5-2640	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-A6U	1xE5-2640	1333MHz RDIMM	1x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-A7U	1xE5-2670	1333MHz RDIMM	1x16GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-A9U	1xE5-2620	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2594-ADU	1xE5-2670	1333MHz RDIMM	1x8GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2594-AEU	1xE5-2690	1333MHz RDIMM	1x16GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet														
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2660 processor (8C/16T, 2.2GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2690 processor (8C/16T, 2.9GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets							2U Rack top 							
Implementation	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)							Front  Bay 10-17 are available on sixteen disk bays models only							
Memory	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported							Rear  Slot 4, 5 are available on dual processors models only							
Additional memory disclaimers								Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured							
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz							Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk							
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012)							Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8							
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (IBBU08) for RAID 700							Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)							
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter							Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage							
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"							Energy Management Technology - Intel Power Node Manager - Lenovo® SmartGrid Manager							
Tape drive	None							ENERGY STAR® Server 1.1-compliant RoHS-compliant							
Optical	DVD±RW or DVD ROM, slim							For more accessories, see O-RDS sheet							
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Riser card															
Front ports	Two USB 2.0, one analog VGA DB-15 connector														
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to six fans (5+1 redundant), hot-swap														

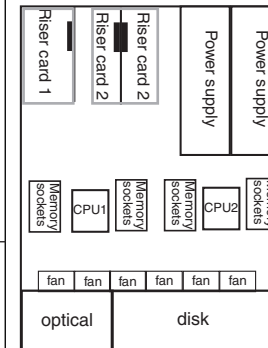
ThinkServer RD630 with 2.5" Disk Bay (2594) - TopSeller (August 2012)

Product Specifications Reference (PSREF)

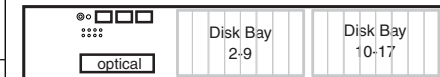
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2594-A8U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2594-AAU	1xE5-2640	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
2594-ABU	2xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2594-ACU	1xE5-2650	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet														
Processor	Up to two processors, one or two processors standard, Intel Xeon E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets														
Implementation	Two LGA2011 sockets														
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays														
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Riser card	Two USB 2.0, one analog VGA DB-15 connector														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports	Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Intelligent Diagnostics Module (IDM)	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Systems mgmt	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Security chip															
Prerequisites															
Keyboard/mouse															
Power supply															
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to six fans (5+1 redundant), hot-swap														

2U Rack top

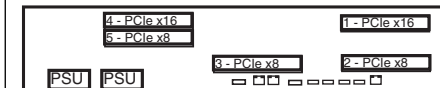


Front



Bay 10-17 are available on sixteen disk bays models only

Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

- Bay 1 5.25", 0.5" high, external, for optical
- Bay 2-9 2.5", 0.6" high, external, for disk
- Bay 10-17 are available on sixteen 2.5" disk bays models:
- Bay 10-17 2.5", 0.6" high, external, for disk

Expansion Slots

- Slot 1: half-length, full-height, PCI Express 3.0 x16
- Slot 2: half-length, full-height, PCI Express 3.0 x8
- Slot 3: Low Profile, PCI Express 3.0 x8
- Slot 4-5 are available on dual processors models:
- Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
- Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

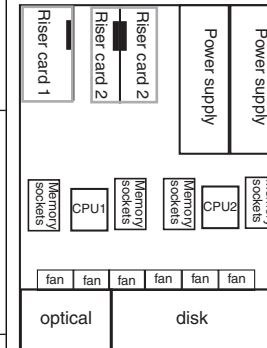
ThinkServer RD630 with 2.5" Disk Bay (2593) - TopSeller

Product Specifications Reference (PSREF)

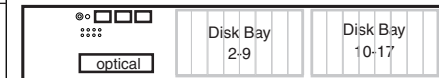
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2593-A1U	2xE5-2620	1333MHz RDIMM	2x8GB		700+Battery	5x600GB 2.5" SAS	8xHS	SATA/SAS	DVD	Premium	TPM	iKVM	No	No	2
2593-A2U	2xE5-2620	1333MHz RDIMM	2x8GB	5	700+Battery	6x600GB 2.5" SAS	8xHS	SATA/SAS	DVD	Premium	TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet														
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)														
Implementation	Two LGA2011 sockets														
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)														
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported														
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz														
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012)														
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700														
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter														
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"														
Tape drive	None														
Optical	DVD±RW or DVD ROM, slim														
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management														
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Front ports	Two USB 2.0, one analog VGA DB-15 connector														
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part														
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to six fans (5+1 redundant), hot-swap														

2U Rack top



Front



Bay 10-17 are available on sixteen disk bays models only

Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

- Bay 1: 5.25", 0.5" high, external, for optical
- Bay 2-9: 2.5", 0.6" high, external, for disk
- Bay 10-17 are available on sixteen 2.5" disk bays models:
- Bay 10-17: 2.5", 0.6" high, external, for disk

Expansion Slots

- Slot 1: half-length, full-height, PCI Express 3.0 x16
- Slot 2: half-length, full-height, PCI Express 3.0 x8
- Slot 3: Low Profile, PCI Express 3.0 x8
- Slot 4-5 are available on dual processors models:
- Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
- Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD630 with 2.5" Disk Bay (2595)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2595-A1U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700		8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
2595-A2U	1xE5-2650	1333MHz RDIMM	1x16GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A5U	1xE5-2650	1333MHz RDIMM	6x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A6U	1xE5-2620	1333MHz RDIMM	3x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A7U	2xE5-2670	1333MHz RDIMM	6x16GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty **3-year** parts and labor; more Lenovo Services see S-RDS sheet

Processor
Up to two processors, one or two processors standard,
Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)
Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)
Two LGA2011 sockets

Implementation
Two LGA2011 sockets

Memory
RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;
RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)
LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)

Additional memory disclaimers

- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs
- Over twelve RDIMMs requires dual processors
- Over eight LV RDIMMs requires dual processors
- Mixing of RDIMM and LV RDIMM is not supported

Graphics
Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;
Maximum resolution: 1920x1200@60Hz

Disk bays
Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012)

Disk controller
RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support
RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700

RAID Support
Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter

Disk(s)
2.5" SAS: SAS 6.0Gb/s, 10000 rpm
SSD: Solid State Drive, 2.5"

Tape drive
None
Optical
DVD±RW or DVD ROM, slim
Diskette
None (use USB port)

Chipset
Intel C602J Chipset

Ethernet
Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5

Riser card
Two USB 2.0, one analog VGA DB-15 connector
Front ports
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector

Intelligent Diagnostics Module (IDM)
Supports IDM or IDM Premium on selected models
Basic: IDM LED lights indicate failing component category
Premium: IDM Premium LED lights indicate individual failing part

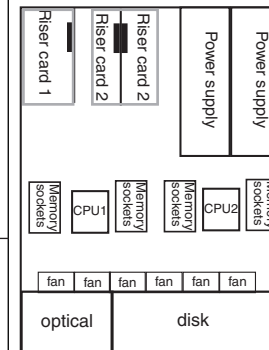
Systems mgmt
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);
iKVM: add-on ThinkServer Management Module Premium for iKVM functions

Security chip
No onboard TPM chip;
TPM: additional add-on card for TPM function, TCG 1.2-compliant

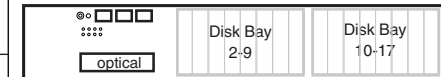
Prerequisites
SATA/SAS disk, OS
Keyboard/mouse
None (use USB port)
Power supply
One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies

Rack kit
Includes rack kit
Cable management
Optional cable management arm on selected models
Cooling
Up to six fans (5+1 redundant), hot-swap

2U Rack top



Front



Bay 10-17 are available on sixteen disk bays models only

Rear



Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-9 2.5", 0.6" high, external, for disk
Bay 10-17 are available on sixteen 2.5" disk bays models:
Bay 10-17 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 3.0 x8
Slot 3: Low Profile, PCI Express 3.0 x8
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Intel Power Node Manager
- Lenovo® SmartGrid Manager

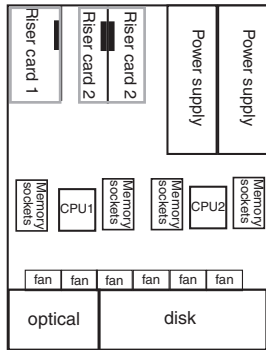
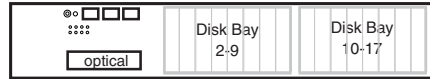
ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer RD630 with 2.5" Disk Bay (2595) - August 2012

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2595-A3U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A4U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	2

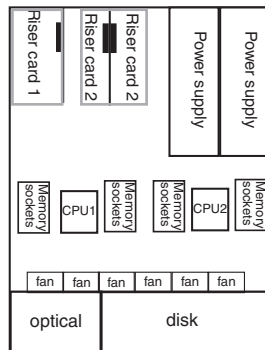
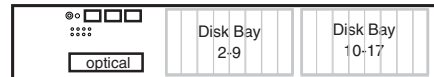
Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet							2U Rack top 							
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets							Front  Bay 10-17 are available on sixteen disk bays models only							
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)							Rear  Slot 4, 5 are available on dual processors models only							
Additional memory disclaimers	- Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs - Over twelve RDIMMs requires dual processors - Over eight LV RDIMMs requires dual processors - Mixing of RDIMM and LV RDIMM is not supported							Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured							
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz							Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk							
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays							Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8							
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700							Security - Security chip (selected models, see information on left) - Administrator password - User password - Boot sequence control - Boot without keyboard, mouse, diskette - Serial port I/O control - USB port disablement (all)							
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter							Software Management Tools - ThinkServer EasyStartup - ThinkServer EasyManage							
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"							Energy Management Technology - Intel Power Node Manager - Lenovo® SmartGrid Manager							
Tape drive	None							ENERGY STAR® Server 1.1-compliant RoHS-compliant							
Optical	DVD±RW or DVD ROM, slim							For more accessories, see O-RDS sheet							
Diskette	None (use USB port)														
Chipset	Intel C602J Chipset														
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5														
Riser card	Two USB 2.0, one analog VGA DB-15 connector														
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector														
Rear ports	Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions														
Intelligent Diagnostics Module (IDM)															
Systems mgmt															
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant														
Prerequisites	SATA/SAS disk, OS														
Keyboard/mouse	None (use USB port)														
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies														
Rack kit	Includes rack kit														
Cable management	Optional cable management arm on selected models														
Cooling	Up to six fans (5+1 redundant), hot-swap														

ThinkServer RD630 with 2.5" Disk Bay (2595) - Vectorwise Appliance

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
2595-A8U	1xE5-2643	1333MHz RDIMM	8x8GB	10	700+Battery	4x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	Win2008E R2	2
2595-A9U	2xE5-2667	1333MHz RDIMM	16x8GB	6	700+Battery	8x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	Win2008E R2	2
2595-AAU	2xE5-2667	1333MHz RDIMM	16x8GB	6	700+Battery	8x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	RHEL 6.0	2

- These models are ThinkServer solutions for Vectorwise Data Mart Appliance for more information please see www.actian.com/products/vectorwise/vectorwise-datamart-appliance

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	
Processor	Up to two processors, one or two processors standard, Intel Xeon E5-2643 processor (4C/8T, 3.3GHz, 10MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.5GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2667 processor (6C/12T, 2.9GHz, 15MB, 8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.5GHz), 4-channel DDR3 memory controller (up to 1600MHz)	
Implementation	Two LGA2011 sockets	
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; <i>RDIMM:</i> twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) <i>LV RDIMM:</i> sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)	
Additional memory disclaimers	• Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over twelve RDIMMs requires dual processors • Over eight LV RDIMMs requires dual processors • Mixing of RDIMM and LV RDIMM is not supported	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays	
Disk controller	RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Battery for 700:</i> Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive	None	
Optical	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	Intel C602J Chipset	
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5	
Riser card	Two USB 2.0, one analog VGA DB-15 connector	
Front ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	
Rear ports		
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models <i>Basic:</i> IDM LED lights indicate failing component category <i>Premium:</i> IDM Premium LED lights indicate individual failing part	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>iKVM:</i> add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; <i>TPM:</i> additional add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	SATA/SAS disk, OS	
Keyboard/mouse	None (use USB port)	
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	
Rack kit	Includes rack kit	
Cable management	Optional cable management arm on selected models	
Cooling	Up to six fans (5+1 redundant), hot-swap	
Preloaded Operating System		
A8U:	Genuine Windows Server 2008 R2 Enterprise, Vectorwise 100GB limitation per unit	
A9U:	Genuine Windows Server 2008 R2 Enterprise, Vectorwise 1TB limitation per unit	
AAU:	Red Hat Enterprise Linux 6.0, Vectorwise 1TB limitation per unit	
2U Rack top		
		
Front		
		
Bay 10-17 are available on sixteen disk bays models only		
Rear		
		
Slot 4, 5 are available on dual processors models only		
Mechanical		
• 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured		
Disk Bays		
Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk		
Expansion Slots		
Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8		
Security		
• Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all)		
Software Management Tools		
• ThinkServer EasyStartup • ThinkServer EasyManage		
Energy Management Technology		
• Intel Power Node Manager • Lenovo SmartGrid Manager		
ENERGY STAR Server 1.1-compliant RoHS-compliant		
For more accessories, see O-RDS sheet		

See footnotes for important warranty information
US model(s) announced August 28, 2012

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Disclaimer

Lenovo provides the information in the Product Specifications Reference (PSREF) withdrawn product books on an "AS-IS" basis. Because the actual products have been withdrawn from marketing, the information in these withdrawn product books is no longer maintained or updated. The referenced footnote numbering may not correspond with the listed footnotes.

PSREF books for the withdrawn systems:

http://www.lenovo.com/psref/psrefs_withdrawn.html

Availability: All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

Warranty: For a copy of applicable product warranties, write to: Warranty Support Dept., EMEA Services, Lenovo, Eisteinova 21, 851 01 Bratislava, Slovakia. Lenovo makes no representation or warranty regarding third party products or services.

¹ **Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.

² **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.

³ **Systems with limited onsite service** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. Support unrelated to a warranty issue may be subject to additional charges. Support phone list available at www-307.ibm.com/pc/support/site.wss/document.do?Indocid=MIGR-70552

⁴ **SATA/SAS:** The system configuration supports the installation of either SATA or SAS disks. A configuration including both SATA and SAS disks is not supported.

⁷ **Lenovo Services:** These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. See Lenovo Warranty Services terms and conditions for complete details and restrictions.

⁸ **RAID:** Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.

RAID levels and requirements:

- **RAID 0 (striping)** provides increased performance by writing data across multiple drives.
- **RAID 1 (mirroring)** provides fault tolerance by writing the data on two drives.
- **RAID 5 (striping with parity)** uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- **RAID 6 (striped set with dual distributed parity)** provides fault tolerance from two drive failures; array continues to operate with up to two failed drives. Requires four drives.
- **RAID 10 (or RAID 1+0)** combines RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance. Requires four drives.
- **RAID 50 (or RAID 5+0)** combines RAID 5 and RAID 0 to create block-level striping with distributed parity improving performance over RAID 5. Requires six drives.
- **RAID 60 (or RAID 6+0)** combines RAID 6 and RAID 0 to create block-level striping with distributed double parity improving performance over RAID 6. Requires eight drives.

¹⁴ **Response times may vary.** Response time is an average target and committed service level. May exclude some holidays. Telephone support may be subject to additional charges.

ThinkServer™

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